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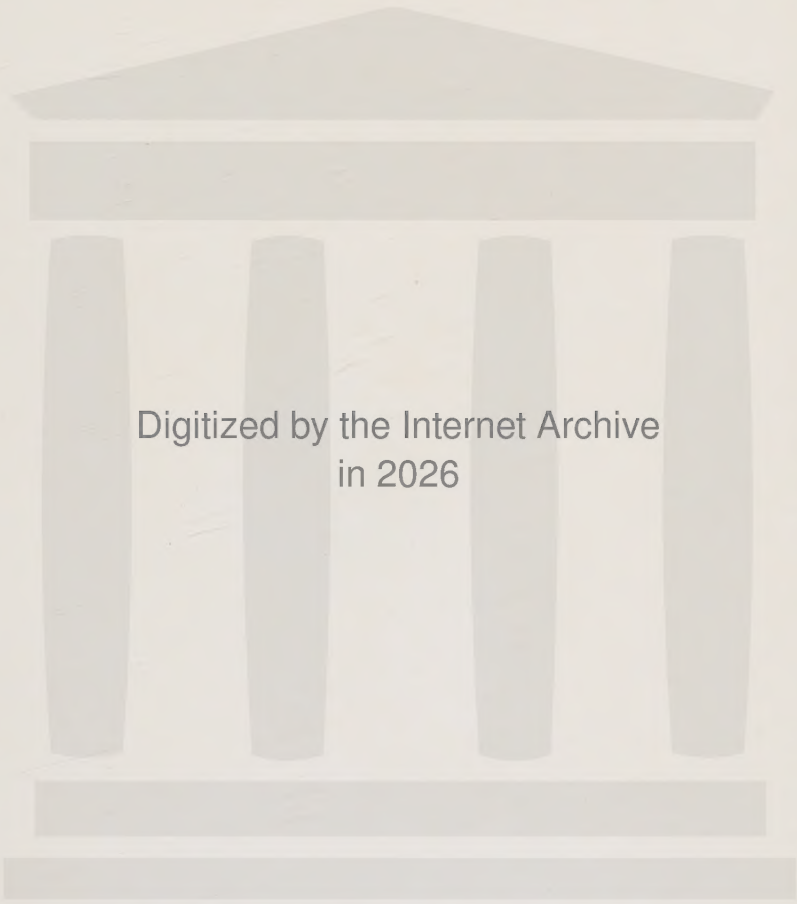
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THE JUNIOR COLLEGE

BY

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Professor of Secondary Education in the University of Minnesota

Volume I

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TO

WILLIAM WATTS FOLWELL,

PRESIDENT EMERITUS

OF THE UNIVERSITY OF MINNESOTA,

WHO MORE THAN A HALF CENTURY AGO FORESHADOWED

THE JUNIOR COLLEGE MOVEMENT

7106

The investigation upon which report is made in the following pages was carried forward under subventions from the Commonwealth Fund of New York City and from the University of Minnesota. The same institutions have joined in making possible the publication of this study.

PREFACE

Those who muster courage sufficient to read this voluminous report of an investigation of the junior college movement will early become aware that what has been attempted is not a bare recital of the facts of practice and the description of the *status quo* of this new educational unit. Nor has its writer aimed at recording the findings of inspectorial activities. The persons who seek for judgments on particular junior colleges will be disappointed, even though such evaluations are desirable in the current chaos of junior college development. What has, instead, been essayed is a comprehensive evaluation of the movement, an evaluation involving inquiry into the merit of the movement as a whole and of its several forms of manifestation, and a marking out of what seem, in view of the results of the investigation, appropriate lines of future development. The type of study essayed has, however, required the assemblage and presentation of a wide array of factual material descriptive of present day junior colleges, as well as of institutions bearing any important relationship to them, and the endeavor in the following pages is to give, at the same time that the more comprehensive evaluation proceeds, an adequate understanding of current junior college practices and conditions.

No one conversant with investigations of the type reported will need to be told that it could never have been accomplished without the generous co-operation of those in possession of the necessary information—information secured through visits to almost seventy junior colleges (not to mention a number of other higher institutions) entailing more than twenty thousand miles of travel, through observation of work done in hundreds of classes, through thousands of questionnaires answered and tests taken, and through what during several months was a flooded stream of correspondence. The writer regrets that it is impossible for him to acknowledge here by name the individuals in the army of presidents, superintendents, deans, principals, registrars, and other administrative officers, teachers in high schools, junior colleges, colleges, and universities, students in institutions of all these types, and parents of junior college students, who have contributed in one way or another to the factual materials gathered for the study. The most that can be done is to make personal mention of those who helped digest the information thus made available and who, together with the writer, contributed to a total of more than twelve thousand hours of labor spent upon the study at the University of Minnesota. First among those whose capable and conscientious service should be acknowledged is P. W. Hutson, during 1921-22 full-time research assistant on the project, now assistant professor of secondary education in the University of Pittsburgh. Others giving part-time assistance were: Ethel M. Ackerman, Ada M. Bing (most of her

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Drawings for the figures of the report were prepared in the Medical Art Shop of the University of Minnesota.

L. V. K.

University of Minnesota,
Minneapolis,
June, 1923.

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PART I

THE SCOPE AND ASPIRATIONS OF THE JUNIOR COLLEGE MOVEMENT

CHAPTER I

THE SCOPE AND VARIETY OF THE MOVEMENT

I. The Growth and Present Scope of the Movement

The growth of the junior college.—During the last two decades there have appeared upon the educational scene two new units asking for recognition in our system of education. Singularly enough, and without apparent conjunction of intention on the part of their friends, both have been brought before the American audience bearing the word "junior" in the names most frequently applied to them. This is, however, not without analogous reason, since each is designed to provide education for those who in their stages of training are in the vicinage of the beginning years of the institutions of which they are namesakes. For one of them, the junior high school, the writer has already attempted an evaluation and has set down what seemed to him at the time of writing to be the basic principles of guidance in its development. A similar but more comprehensive evaluation of the other, the junior college, is here essayed.

Of the two movements referred to, the one lower in the system—and probably in part because it is lower in the system—has taken greater hold, and is to be found in greater numbers in most sections of the country. The junior college, however, has grown at a rapid rate, and seems no less to merit such evaluation as is possible in its present state of development.

The growth in numbers of these institutions since near the inception of the movement[1] is shown in Table I and Figure 1. The former presents in the right-hand column the numbers of junior colleges of all types established during each year since those now in existence began to appear on the educational horizon. It does not, of course, include those which were established some years ago and which are not now in existence or were not still in existence during the school year 1921-22. There have been some of these. The data presented have been compiled from the lists of junior colleges to be found in Appendix A.

The upper line of growth in the figure referred to shows, for all those junior colleges whose years of establishment are supplied in these lists, the

[1] The writer has felt it to be gratuitous to re-relate the history of the movement except as it concerns the actual appearance of the institution itself. The reader who desires to acquaint himself with the historical background foreshadowing the establishment of junior colleges will find that this has been satisfactorily provided in F. M. McDowell's useful study bearing the title "The Junior College" and appearing as the United States Bureau of Education *Bulletin* No. 35, 1919. (See especially Chapters II-III.) The present writer makes some references to the origins of the junior college idea in Chapter XXIII of the current volume.

total in operation in each successive year since 1900.[2] Both the right-hand column of the table and the uppermost curve of the figure emphasize the fact of rapid increase, especially during the last ten or twelve years.

TABLE I

YEARS OF ESTABLISHMENT OF JUNIOR COLLEGES IN OPERATION DURING 1921-22 OR 1922-23

YEAR OF ESTABLISHMENT	NUMBER ESTABLISHED			
	Public Junior Colleges	State Institutions	Private Institutions	All
1839	....	....	1	1
1869	....	....	1	1
1890	....	....	1	1
1898	....	....	3	3
1900	....	....	2	2
1901	....	....	1	1
1902	1	....	....	1
1903	....	....	1	1
1904	....	....	1	1
1905	....	....	2	2
1906	....	....	1	1
1908	....	....	2	2
1909	....	....	4	4
1910	....	1	5	6
1911	1	5	3	9
1912	....	....	6	6
1913	2	1	10	13
1914	1	....	8	9
1915	7	2	8	17
1916	6	2	14	22
1917	3	2	11	16
1918	4	....	7	11
1919	4	2	10	16
1920	4	2	4	10
1921	3	7	8	18
1922	9	..	5	14
Year not reported	1	....	5	19
TOTAL	46	24	137	207

The present scope of the movement.—The figure at the foot of the right-hand column will give some notion of the present extent of the junior college movement, although it is not to be regarded as an accurate and complete count. Such a total it seems impossible to secure, because of an unwillingness on the part of authorities in charge of a small proportion of units to

[2] It ignores the fact of discontinuance during the period of the late war for a few institutions which subsequently resumed activities.

supply the information desired even on a third or fourth appeal; because of the appearance of new units and the occasional discontinuance of a unit once in operation; and also because those appealed to for lists of junior colleges in any state are unaware of the fact of existence of all such institutions. Doubtless a larger number were organized during 1922-23 than are shown. A few at least have been discontinued or have metamorphosed into four-year colleges.

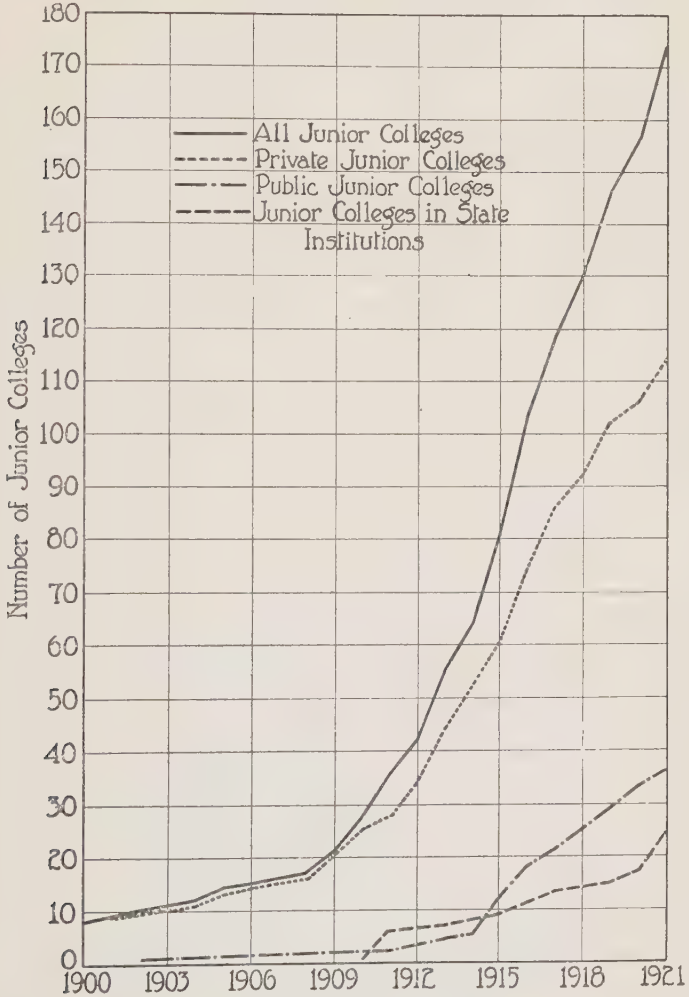

Figure 1

Numbers of junior colleges in operation in each successive year from 1900 to 1921, inclusive

The lists referred to account for a total of 207 different units whose authorities have desired that their institutions be known as giving junior college work. It does not include a few institutions announcing themselves as junior colleges but known to be without students. It is in no sense a count of units accredited by some recognized standardizing agency, as it is somewhat in excess of such a number. Making a conservative allowance for junior colleges in operation but not in the list, we may with assurance say that the correct total is at present well over two hundred.

II. The Types of Junior Colleges

A. Public Junior Colleges

Growth and present status.—The increase of junior colleges maintained by city, high school, or junior college districts, hereafter to be referred to as "public junior colleges," is to be seen in the first column of figures in Table I and in Figure 1. The first of those institutions introduced into the tabulations to come into existence was the one maintained in connection with the township high school at Joliet, Illinois. Another was established at about the same time in Goshen, Indiana, but has since been discontinued. It was not until 1911 that others of the group considered were established, the period of most rapid development beginning in 1915. As far as can be ascertained from the data assembled for this investigation, thirty-six institutions of this type were in operation during 1921-23. One of these has since been discontinued, but at least nine, despite the financial difficulties of the times, have been added during 1922-23, bringing the total now in existence to at least forty-five. Establishment of additional units is under consideration or already approved in a number of other communities.

The control of these units.—Since they are maintained in connection with city and high school districts, or, as is often the case in California, in junior college districts coterminous with high school districts, the units are under the direction and control of local school authorities. In one instance only, in California, as far as the writer could ascertain, is the control in the hands of a board operating over an area larger than one high school district, city, or union. Certain of the junior colleges of California have entered upon an affiliation with their state university which implies some measure of co-operative direction.

Almost exclusively these public junior colleges are housed with high school units, although there are varying degrees of separation of administration, teaching faculty, student body, and social life in the two units. The only exception which the investigator met with during visits to these institutions is in Kansas City, Missouri, where the upper unit, although a part of the public school system, is housed in a separate structure at some

distance from high school units. Crane Junior College in Chicago is also to have a separate home.

The chief factor of growth.—The facts of control and housing of this type of junior college direct attention to what seems to the writer a chief, although not at all the only, factor in their development—that they are upward extensions of our public school system, a step in evolution which is a natural one in communities which have taken care in something like a satisfactory manner of education on the lower levels. The first step was the provision of the work of the common school. Next to follow was the high school. Last to come is what many school authorities concerned are inclined to believe to be a culmination of the local school system, the junior college. Whatever discrediting considerations may be mustered against this type of development, it does have the recommendation of being in at least one important sense a natural next step for some communities.

B. State Institutions

Growth and present status.—Under the second type—those maintained as, or as parts of, state institutions—have been grouped a wide variety of junior colleges. Most of the units, however, are maintained in connection with normal schools and teachers colleges. The table and figure indicate that this was the last of the types to come into existence, but that its representatives have increased in numbers with considerable rapidity since their first appearance. The spurt of growth for 1921 was caused entirely by developments in California, and here the increase was in part at the expense of junior colleges in high school districts, which were taken over by state teacher-training institutions.

The total number of these units on state foundations in 1921-22, as far as ascertainable for this study, was twenty-four. Of these, six only were not operated in connection with normal schools and teachers colleges. Without question this number would be somewhat larger if to it were added normal schools and teachers colleges which permit or encourage students who plan to go on to other higher institutions to carry academic work to the exclusion or almost to the exclusion of professional courses during their periods of attendance without making formal announcement of offering junior college or regular college curricula. This does not refer to those teacher-training institutions whose graduates, pursuing regular two-year professional curricula, are granted two years of credit in colleges or universities to which they transfer. Such institutions were not regarded as belonging properly to the junior college movement as here studied, despite the fact that their catalogues sometimes refer to them as junior colleges.

As six of the junior colleges in normal schools listed in Appendix A are located in Wisconsin, it is pertinent in setting forth the present status of

such institutions to quote from resolutions recently adopted by the Board of Normal Regents in that state:

> Be it resolved that on and after July 1, 1923, all courses offered in Wisconsin Normal Schools are hereby authorized to offer four-year courses for the preparation of teachers for the public schools of the state; that the entire resources and energy of the Normal Schools shall be devoted to this end; that all subjects not primarily, definitely, and exclusively a part of a course for the preparation of teachers shall be discontinued.
>
> Be it further resolved, that beginning July 1, 1922, the several State Normal Schools are hereby authorized to offer four-year courses for the preparation of teachers of general academic subjects in high schools, such courses to be based upon the principle of major and minor subjects and to be subject to the specific approval of the Board of Regents in each case, admission requirements to which shall be graduation from a four-year course in an approved secondary school.
>
> Be it further resolved, that beginning July 1, 1922, the several State Normal Schools which have special departments for the preparation of teachers of physical education, music, drawing, industrial education, agriculture, home economics, and commerce, are hereby authorized to offer four-year courses for such departments, admission requirements to which shall be graduation from a four-year course in an approved secondary school.
>
> Be it further resolved, that on and after July 1, 1923, the college courses,[3] so-called, in Wisconsin State Normal Schools, now existing.....shall be discontinued in all of the Normal Schools of this state.[4]

At the same time the Board of Normal Regents recommended legislation prescribing a minimum preparation for all high school teachers of three years beyond the secondary school, this to apply both to those teaching academic and special subjects, and authorizing the board to grant the bachelor in education degrees to those who have completed the four-year curricula referred to. The apparent effect of putting this policy into operation is the discontinuance of six junior colleges made possible by legislation in 1911 and the erection of the four-year teachers college on the academic foundations provided by the establishment of the junior college curricula.

Control.—For junior colleges in normal schools and teachers colleges the control, with one exception, is lodged in whatever authorities direct the institutions of which they are a part. This is the state normal school board, or, in a small proportion of instances, the special board in charge of a particular normal school. The exception is the Southern Branch of the University of California, which is in charge of the parent institution. The control of the six remaining units varies between state boards of education, as with Idaho Polytechnic Institute, and boards in charge of a special type

[3] Referring to junior college curricula.

[4] Quoted in *Educational Administration and Supervision* 8:383-84. September, 1922.

of education, as with Grubbs Vocational College and John Tarleton Agricultural College in Texas. The term "state" used in List II of Appendix A means no more than that the authority in direct control is state rather than local.

The chief factor of growth.—The outstanding factor in the growth of junior colleges in normal schools and teachers colleges, the prevailing group in this type, is the motive of expansion from the normal school to a more widely functioning status. Since the goal selected for the normal school is more often than any other the full-fledged teachers college, to provide the academic work for junior college curricula would be looked upon as a stepping-stone to the status sought, and, therefore, at least temporarily desirable.

C. Private Junior Colleges

Growth and present status.—The table and figure make clear that of the three types of junior colleges the private seem to have come into existence soonest and increased in numbers at the most rapid rate. It is not to be assumed that those reported to have been in existence before or at the opening of the century were established with anything like a consciousness of the relationship of such establishment to a junior college movement. In a few instances, even, the answer to the inquiry on this point may have been made on the erroneous assumption that it was the date of establishment of the institution which was asked for, rather than of the junior college curriculum. In other instances there must have been in operation in these early years an advanced curriculum two years in length, which, at the inception of the movement proper, logically classified as a junior college offering. In at least two instances they were institutions patterned to some extent after the German *gymnasia,* which presumably carry the student to the end of our second college year.

The growth of this type has been so rapid throughout the period since the opening of the century that, despite the rapid development of the other types, they still maintain their numerical supremacy at the present time, since they now constitute fully two thirds of all units bearing this name.

Control.—Approximately a hundred of the institutions in List III of Appendix A were reported as operating under the auspices of some church or other religious group. A wide range of denominational frequency is represented, beginning with the Methodist Episcopal Church and including considerable numbers with Lutheran, Baptist, Catholic, Presbyterian, Latter Day Saints, Christian, and Episcopal connections, not to mention a scattering of others. Some of those designated as being under "private" auspices, also, have denominational affiliations. A number of the remainder, but not all, are strictly private venture schools. It is not, however, easy to locate these unmistakably, especially by means of a blank of inquiry.

Secondary school associations.—Like the junior colleges in city and high school districts, but unlike those in state institutions, most of this group are maintained in association with institutions of secondary school grade. In some cases the two junior college classes are known as junior and senior years, and the two high school years immediately below as freshman and sophomore years.

The chief factor of development.—Although, as with the two preceding types, the factors of development of private junior colleges have been various, the chief force has probably been the movement for standardization of higher institutions. Not being in a position, on account of inadequate teaching staff, facilities, and resources, to qualify as standard four-year colleges, many less well-established institutions have taken recourse to the junior college status as a means of finding a recognized place in the school system. In a small proportion of instances, the growth has had something akin to that of the stronger public high school, which, through sheer vigor, both scholastic and financial, has tended to rise into the higher levels of education. Then, too, there is the group of weaker but aspiring secondary schools, which look upon the junior college status as one step above the high school level and, therefore, that much nearer the goal of the standard college to which they hope to evolve in the passage of a few to several years. Lastly, there is the small group already mentioned, which were established as presumable equivalents of German *gymnasia*. But by far the most common factor is the first one suggested.

D. The Junior College in Universities

The fourth type is the one at this writing to be found as a lower division including the first two years in six universities of the West and Mid-West. Although bearing significant relationships to other types, it is reserved for analytical description in a subsequent chapter (XXI).

III. The Geographical Distribution

The distribution in general.—The geographical distribution of 207 junior colleges of the three types is shown in the accompanying outline map of the United States (Figure 2). Among the general impressions gained from a cursory examination of the map are (1) the widespread representation of the movement: 11 only of the 48 states contain no junior colleges; (2) the greater prevalence in the southern, mid-western, and Pacific Coast states; (3) the appearance of public junior colleges primarily in the Mid-West and California; (4) the appearance of the smaller number of junior colleges as state institutions in a distribution almost fully as widely scattered; and (5) the rather general distribution of private units to almost all sections of the country, but with some degree of concentration in Missouri and the southern states.

Figure 2

Map showing junior colleges by types

The distribution by sections of the country.—Table II gives point to some of these general impressions. It shows that the public junior college is characteristically a western and mid-western phenomenon. The same thing may be said of state institutions. A full half of the private institutions are in the southern group of states, but almost two thirds as many are to be found in the mid-western group, with a scattering distribution in the two remaining sections. The New England and Middle Atlantic states show a much smaller representation than does any other section.

TABLE II

DISTRIBUTION BY SECTIONS OF THE COUNTRY OF THE JUNIOR COLLEGES OF THE THREE MAIN TYPES

SECTION	PUBLIC JUNIOR COLLEGES	STATE INSTITUTIONS	PRIVATE INSTITUTIONS	TOTALS
New England and Middle Atlantic	2	..	9	11
Southern	1	3	69	73
Middle Western	25	11	44	80
Western	18	10	15	43
TOTALS	46	24	137	207

IV. JUNIOR COLLEGE ENROLMENTS

The size of junior college enrolments.—The distribution by size of enrolment of junior colleges and certain measures of tendency of size are presented in Table III, while the medians and quartiles of each type and for all units for which enrolment data for 1921-22 were gathered are reproduced in Figure 3. A glance down the four columns of distributions brings home the fact that the bulk of junior college units are, in point of size of student body, small institutions. The medians and quartiles tend to emphasize the same fact, although they show that both public types tend to run larger than the private units. The original distribution of enrolments shows six of the type last named with 6 college students, two with 7, and one with 8, although the public institutions include only one unit with as few as 7 students. On the other hand, each of the three types includes five institutions with 200 or more students enrolled.

With the exceptions of seventeen institutions, the figures on enrolment utilized in the tabulations are for the two years of junior college work. In these seventeen junior colleges students were enrolled in first year work only. For at least six of these, there was no attempt on the part of the authorities in charge to provide the second year of work.

Total enrolments.—The full count of junior college registration in 1921-22 for all units reporting is shown near the foot of Table III. Making an estimated allowance for the institutions for which data on enrolment are not at hand, the approximate total numbers of students in junior college years for the three types are, respectively, over 5000, somewhat more than 3500, and somewhat short of 8000. These when added mount to a grand total of more than 16,000 students, or roughly the equivalent of the enrolment in two large state universities—no inconsiderable number. The enrolment during 1922-23 was in all likelihood well up toward 20,000.

TABLE III

DISTRIBUTION OF JUNIOR COLLEGES BY NUMBERS OF STUDENTS ENROLLED DURING 1921-22 AND AVERAGES, MEDIANS, AND QUARTILES OF THE ENROLMENTS

ENROLMENT	NUMBERS OF JUNIOR COLLEGES			
	Public	State	Private	All
Less than 25	4	2	27	33
25– 49	8	6	51	65
50– 74	11	2	19	32
75– 99	..	3	10	13
100– 124	2	2	11	15
125– 149	2	..	1	3
150– 174	3	..	1	4
175– 199	1	1	..	2
200– 299	2	2	2	6
300– 399	..	1	1	2
400– 499	..	1	1	2
500–1,200	3	1	1	5
Total schools	36	21	125	182[a]
Total enrolments	5,163	3,276	7,682	16,121
Average[b]	143	156	61	89
First quartile[b]	39	28	28	28
Median[b]	60	78	44	47
Third quartile[b]	151	195	72	85
Range	7 to 1,227[c]	15 to 1,080	6 to 550	6 to 1,227

[a] No report for 13 institutions.
[b] Computed from original distributions.
[c] Not including summer session.

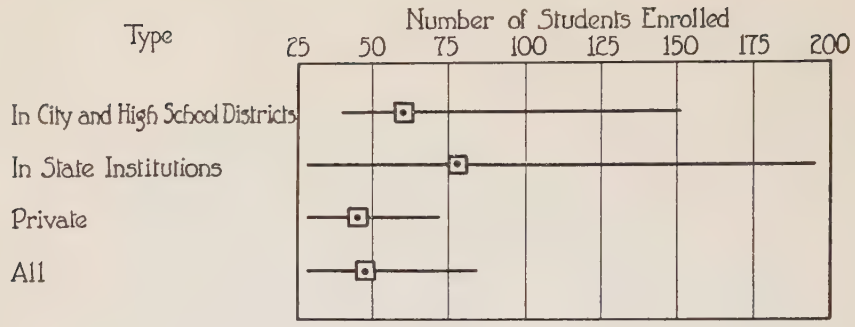

Figure 3

Median enrolments and range of enrolments of middle 50 per cent of each type and of all junior colleges (The length of line represents the range of middle 50 per cent; the square locates the median.)

V. Coeducation and Segregation in Junior Colleges

A final detail in this preliminary description of the status of the junior college movement concerns the division of the several types into men's, women's, total segregated, and coeducational institutions. Distribution in this way resulted in Table IV, which shows that public junior colleges are seldom if ever segregated institutions, whereas private junior colleges are in almost three fifths of the cases not coeducational. Of the segregated units approximately three fourths are for women and the remaining fourth for men.

TABLE IV

Numbers and Percentages of Each Type and of All Junior Colleges Which Are Men's, Women's, and Coeducational

Types	Men's		Women's		Total Segregated		Coeducational		Total	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
Public	..	..	..	..	..	..	46	100.0	46	100.0
State	1	4.3	..	..	1	4.3	22	95.7	23[a]	100.0
Private	18	13.7	59	45.0	77	58.8	54	41.2	131[b]	99.9
All	19	9.5	59	29.5	78	39.0	122	61.0	200	100.0

[a] Status of one of the total of 24 not known.
[b] Status of 6 of the total of 137 not known.

VI. The Movement Merits Investigation

In the brief span of approximately two decades an educational institution practically unknown at the opening of the century has multiplied to such an extent that at the close of the period the total number of its representatives is well in excess of two hundred. Exclusive of the units to be

found in universities, these junior colleges group roughly under three widely differing types, public junior colleges, state institutions, and schools on private foundations. Within each group there are variations. These junior colleges are to be found in one or more of their three forms in more than three fourths of the states and in all sections of the country. They range in enrolment from a mere handful of students to more than a thousand, while the grand total of registration in them is already equivalent to that of two large state universities. There can be no doubt that a movement which develops through these variations and to such proportions during such a brief period of time, for itself and on account of its relationships to other units in the educational system, is deserving of more scrutiny than it has had, both for the purpose of evaluating it, and, in the event of its being found a desirable addition to the educational system, of marking out appropriate lines for its future development.

CHAPTER II

CURRENT CONCEPTIONS OF THE SPECIAL PURPOSES OF THE JUNIOR COLLEGE[1]

I. Canvassing for the Purposes

Many who take thought for the first time of the function of the junior college are inclined to look upon this new unit in the school system solely as a sort of isthmus connecting the mainland of elementary and secondary education with the peninsula of professional and advanced academic training. A canvass of the special purposes of this recent addition to our educational institutions shows, on the other hand, that many of its friends expect much more of it than that it shall be a mere "neck of land between two larger bodies of land." In large part these friends of the junior college look upon it as an institution with a function far more extensive than that just described, affecting much larger proportions of the population and influencing profoundly the organization of education on levels above and below.

TABLE V

Special Purposes of the Junior College and the Numbers and Percentages of Statements Recognizing Them

Group	Purpose	Literature on the Junior College (22)		Public Junior College Catalogues (23)		Private Junior College Catalogues (33)	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
I. Affecting education in the two years under consideration	1. Offering two years of work acceptable to colleges and universities	15	68.2	22	95.7	31	93.9
	2. Completing education of students not going on	10	45.5	5	21.7	4	12.1
	3. Providing occupational training of junior college grade	12	54.5	12	52.2	16	48.5
	4. Popularizing higher education	18	81.8	15	65.2	0	0
	5. Continuing home influences during immaturity	18	81.8	4	17.4	4	12.1

[1] This chapter has been adapted from a study reported by the writer under an identical title in the *School Review* 29:520-29, September, 1921.

TABLE V—*Continued*

Group	Purpose	Literature on the Junior College (22)		Public Junior College Catalogues (23		Private Junior College Catalogues (33)	
		No.	Per Cent	No.	Per Cent	No.	Per Cent
	6. Affording attention to the individual student	8	36.4	5	21.7	10	30.3
	7. Offering better opportunities for training in leadership	0	0	0	0	2	6.1
	8. Offering better instruction in these school years	2	9.1	1	4.3	..	..
	9. Allowing for exploration	1	4.5	..	..	1	3.0
II. Affecting the organization of the school system	10. Placing in the secondary school all work appropriate to it	11	50.0	2	8.7	..	..
	11. Making the secondary school period coincide with adolescence	8	36.4	0	0	..	..
	12. Fostering the evolution of the system of education	9	40.9	0	0	..	..
	13. Economizing time and expense by avoiding duplication	5	22.7	0	0	..	..
	14. Assigning a function to the small college	7	31.8	..	..	1	3.0
III. Affecting the university	15. Relieving the university	8	36.4	0	0	..	..
	16. Making possible real university functioning	10	45.5	0	0	..	..
	17. Assuring better preparation for university work	4	18.2	2	8.7	..	..
IV. Affecting instruction in the high school	18. Improving high school instruction	4	18.2	0	0	..	..
	19. Caring better for brighter high school students	1	4.5	0	0	..	..
V. Affecting the community of location	20. Offering work meeting local needs	9	40.9	4	17.4	..	..
	21. Affecting the cultural tone of the community	6	27.3	0	0	..	..

What is presented in this chapter touching the special purposes of the junior college has been compiled from an analysis of a wide variety of materials. Among these materials were, first, twenty-two articles and addresses published in educational periodicals, or, in a few instances, as parts of volumes. This part of the investigation does not include all such material that has made its appearance, but all that was available to the writer at the time the compilation was made. Most of the statements used appeared in print within the last decade. Among those whose contributions to the literature on the junior college were used are Angell, Bolton, J. Stanley Brown, Claxton, Coursault, Harper, Hill, Judd, Lange, Vincent, and Zueblin, not to mention a number of others. The materials used may be assumed to be more or less complete statements of the writers' conceptions of the meaning of this new movement.

A second body of materials was collected from the catalogues or bulletins issued by the junior colleges now in operation, in so far as these were supplied to the writer upon request directed to the head of each school reported by the United States Bureau of Education[2] as maintaining a junior college. For the most part, these catalogues were issued for the school year 1920-21, but in a few instances bulletins published a year or two earlier were used. The total number of institutions represented is fifty-six, twenty-three being public and thirty-three private. Four of the public institutions are established in normal schools, and three more are state institutions of junior college grade. The remainder are junior colleges maintained in connection with city, union-district, township, or county high schools. Of the private junior colleges, seventeen are in southern states and sixteen in other states.

The term "special purposes" as here used nowhere appears in the materials entering into the compilation. What have been so classified are the statements of articles and bulletins designated as the "advantages of," "opportunities of," "values of," "arguments for," etc., the junior college. As may be seen from the following explanation, such statements as are made, indicating as they do the aspirations entertained for the junior college by its friends, are readily transmutable into "special purposes."

The accompanying table and chart show twenty-one more or less distinct purposes. The original distribution contained almost fifty, but a careful consideration of meanings reduced the number more than half. These figures alone indicate a wide variety of functions expected to be performed by the junior college, an indication which is emphasized by a cursory examination of the purposes themselves, or of the groups under which they have been classified.

[2] *Bureau of Education Bulletin*, 1920, 33:95-96.

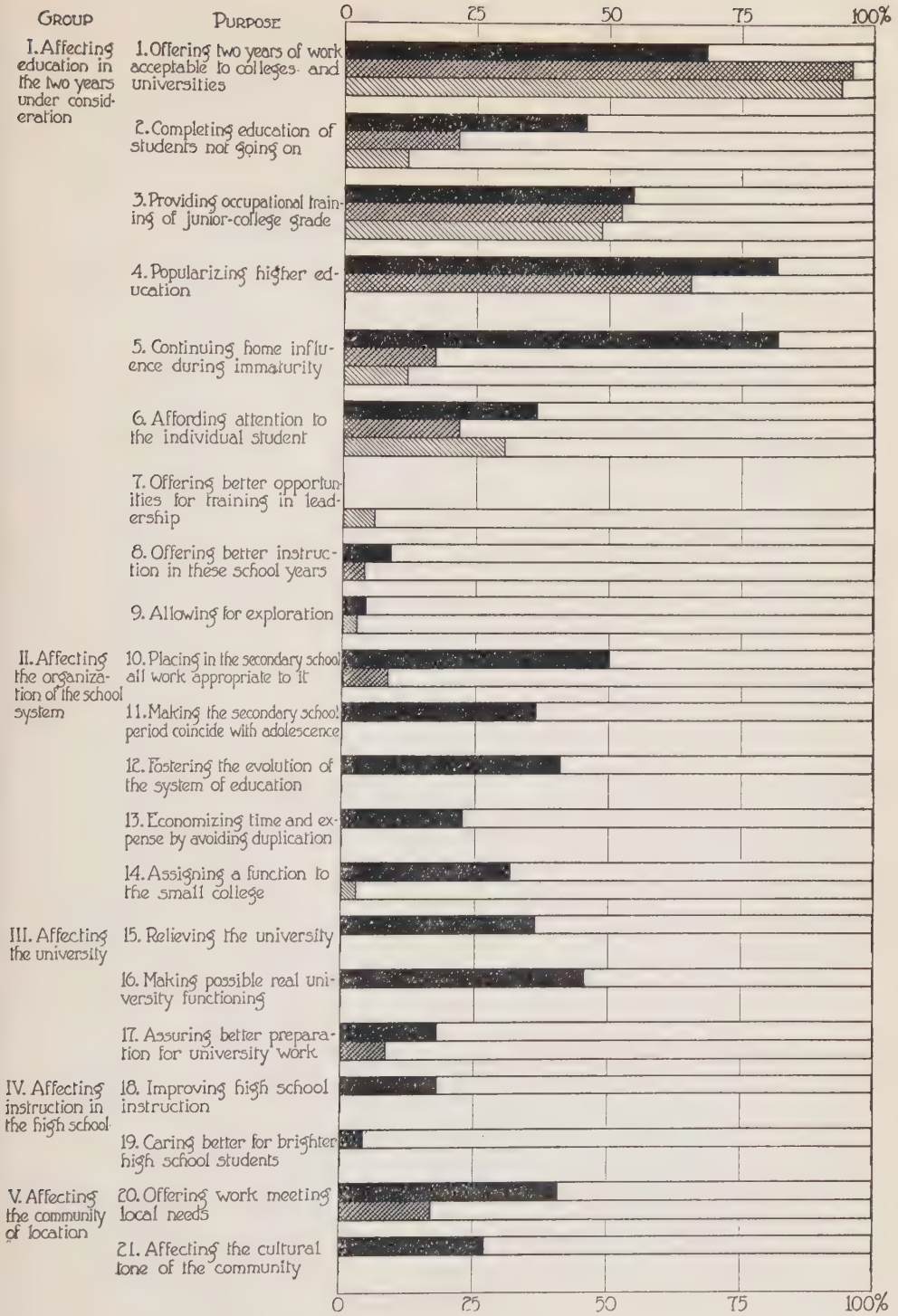
GROUP
PURPOSE
0
25
50
75
100%
I. Affecting education in the two years under consideration
1. Offering two years of work acceptable to colleges and universities
2. Completing education of students not going on
3. Providing occupational training of junior-college grade
4. Popularizing higher education
5. Continuing home influence during immaturity
6. Affording attention to the individual student
7. Offering better opportunities for training in leadership
8. Offering better instruction in these school years
9. Allowing for exploration
II. Affecting the organization of the school system
10. Placing in the secondary school all work appropriate to it
11. Making the secondary school period coincide with adolescence
12. Fostering the evolution of the system of education
13. Economizing time and expense by avoiding duplication
14. Assigning a function to the small college
III. Affecting the university
15. Relieving the university
16. Making possible real university functioning
17. Assuring better preparation for university work
IV. Affecting instruction in the high school
18. Improving high school instruction
19. Caring better for brighter high school students
V. Affecting the community of location
20. Offering work meeting local needs
21. Affecting the cultural tone of the community
0
25
50
75
100%

Figure 4

Special purposes of the junior colleges and the percentages of statements recognizing them (black, in the literature; crosshatching, in public junior college catalogues; single hatching, in private junior college catalogues)

Before proceeding to the elucidation of each special purpose, mention should be made of some difficulties met with in the attempts at classification. In studies of this sort, meanings shade into one another almost imperceptibly; one cannot be certain that violence has not sometimes been done by placing a particular statement under some particular category, thus to some extent misrepresenting the meaning intended by the author. It is also at times impossible to take account of all interrelationships of purpose expressed or implied. Such minor difficulties, however, cannot appreciably affect the general conclusions of this study of special purposes, since the larger meanings stand out unequivocally.

II. The Purposes Found

Group I

Purposes affecting especially the two years under consideration.—The first function appearing in the table and chart—*offering two years of work acceptable to colleges and universities*—is seen to be the one most commonly put forward in the catalogues, but not in the remaining literature. This is the purpose which looks to the interests of students planning to go on to the higher levels of training—the isthmian function already referred to. From this emphasis we may anticipate that this function will be more certain of performance than any of those following in the list.

Purposes 2 and 3 are among those which would make it possible for the junior college to serve the interests of those "not going on." The former urges for such students the *provision of opportunities for "rounding out their general education,"* opportunities which are not given if the work offered is only that regarded as preliminary to some form of advanced training. Those who have been interpreted as subscribing to this purpose are inclined to assume that, for the student who is not going on, education would be left at loose ends if he concluded his training with work suited to the first purpose. It is worth noting that the college catalogues do not posit this purpose as frequently as does the literature.

The third purpose refers to *preparation for occupations the final training for which would be given during junior college years.* If occupations for which the final training can be completed during what are commonly accepted as secondary school years are classified as *trades,* and if those for which such training can be completed only with four or more years of work beyond the high school are classified as *professions,* what is advocated in Purpose 3 is training for *semiprofessions.* Whenever the fields in which such training is to fall are named by the first two groups they are called agriculture, industry, home economics, and commerce. Teaching is the sole occupation named in the catalogues of private junior colleges. The

usual statements in these catalogues, which come from private junior colleges in Missouri and the southern states, are to the effect that the state departments grant certificates to teach upon the completion of some or all of the work of the two years, if the candidate includes courses in education.

Under Purpose 4, *popularizing higher education,* have been classified statements bearing on the lowering of the cost of education on this level or bringing it nearer the home of the student. These have been generalized in this way because cost and proximity are to be regarded as factors very influential in determining the proportions of the population who will avail themselves of higher educational opportunities. It is significant to note that, although this function is recognized in large proportions of the literature and of the catalogues of public junior colleges, it is left unmentioned in the catalogues of private institutions. It is not difficult to see vital relationships between this purpose and the second and third, especially in view of the greater range of interests and mentality that must come to be represented in the larger proportion of the population that will be enrolled in these years of higher education, if the junior college plan is at all commonly introduced.

Purpose 5, *continuing home influences during immaturity,* is proposed by a large proportion of those making the statements in educational literature, but in a much smaller proportion of the catalogues. Whenever put forward in catalogues of private junior colleges, Purpose 5 refers to influences which are *like* those of the home, rather than being those of the home itself. Some of the statements specifically take cognizance of the "critical period" represented by these years in the student's life, a period especially dangerous if he attends the larger universities where the fostering agencies are said not to be as well organized and administered as in the smaller institutions. Closely associated with this purpose and, indeed, at times scarcely to be distinguished from it, are those grouped under Purpose 6 which emphasize what may be termed the social control of the individual in small groups. The other aspect of attention to the individual student—the predominant one—concerns *individual attention during instruction* owing to the smaller classes. Frequently mentioned is the fact that such attention cannot be afforded in the larger schools.

Purpose 7, *offering better opportunities for training in leadership,* proposed in a few catalogues, seems to be put forward by those who feel that the small college, with its smaller enrolment than that of the large university, gives to all students better opportunities for experiences that constitute "laboratory work" in leadership. The last two purposes in Group I, *offering better instruction in these school years* and *allowing for exploration,* are not often named either in the literature or in the catalogues. The acceptance of the former as a special purpose is justified by those who propose

it on the ground of their belief that the best teachers of the secondary school are assigned to junior college work, whereas the teachers of less experience and lower ranks often give instruction to freshmen and sophomores.

Before proceeding to the presentation of the special purposes in the succeeding groups it is pertinent to refer to certain types of statement encountered in the canvass of the materials not shown in the table and chart. These additional statements fell under the following heads: (a) providing training for citizenship, (b) providing religious and moral training, (c) giving intellectual training, and (d) providing physical training. The first of these is posited in a small number of the sources in each of the groups of statements (3, 2, and 1, respectively). If there is a shade of special meaning for the junior college in any of the statements here referred to, it has already been comprehended by Purpose 2. Although the statements classified under (b), proposed by 6 and 20 of the first and third groups, respectively, vary widely, the most common claim bears upon "training for Christian character." A few of these mention the advantage of segregation of sexes. The catalogues of the colleges of Missouri and of the southern states include statements of this type more frequently than others. The meaning of those few statements classified under (c) should be manifest without explanation. Provision of physical training (d) is proposed once only in the literature and eight times in the private junior college catalogues. It is emphasized especially by those institutions which have recently added gymnasiums or swimming pools to their equipment. These aims can be no less pertinent for elementary school or high school than for junior college education. That is to say, they are more in the nature of general aims that must be characteristic of all these levels. It is on this account that they have not been incorporated in the special purposes presented in Table V and Figure 4.

GROUP II

Purposes affecting the organization of the school system.—The table and chart make clear that from this point forward the purposes are not commonly recognized in the junior college catalogues; they are put forward almost exclusively by those expressing themselves through the literature canvassed. It is to be expected that those who contributed to the literature would attempt more nearly complete statements of the functions of the new unit than would those who prepared the catalogues.

The four purposes, 10-13, while having something in common, are sufficiently distinct to justify their being separately listed. They all point toward the *reorganization of the school system by urging the upward extension of the secondary school.* Purpose 10 would accomplish this, maintain its adherents, by placing in the secondary school all work of secondary

school grade. Those who call attention to this advantage mention the fact that the high school in its upper years and the first two years of college or university have much of their curricula in common. Subjects like mathematics and the foreign languages are used as cases in point. Those who propose Purpose 11 complain that our four-year high school covers only a portion of the full period of adolescence and recommend that, in order to adapt the organization to the periods of change in the nature of youth, the secondary school must begin earlier and, at the other end, must include two additional school years. Purpose 12 stresses the historical fact that our public school system has shown a consistent tendency to develop by extension at the top and that the next "logical" step in its evolution is the addition of the freshman and sophomore years of college. This purpose will be seen to have much in common with Purpose 4. Purpose 13 is not unlike the first purpose in this group (10), but emphasizes more especially the economy to be effected through the changes made.

The last purpose (14) in the group calls attention to the service performed for the smaller and weaker colleges by making a place for them in our system of education. The statements included here speak of the impracticability of the aspirations of many of these small colleges to become high-class four-year institutions and stress the appropriateness of their becoming strong junior colleges in a system of which this two-year unit is an organic part.

GROUP III

Purposes affecting the university.—Purposes 15 and 16 are opposite aspects of the same situation. Statements classified under the former argue that the organization of the junior college will remove many or all underclassmen from the university and will free the latter to a large extent from the obligation of carrying forward extension work on the freshman and sophomore level, whereas statements under Purpose 16 contend that, being thus freed from work on the lower level, the university will be in a position to function as a university, i.e., it may devote itself to work on the higher level. This release will react favorably upon the character of instruction and will tend to encourage research, one of the functions of a university which suffers from the overload of freshman and sophomore work. Those who propose Purpose 17 look to see an improvement in the preparation of students for university work, but they fail to mention the grounds for their hopes. These may be implicit in Purposes 6, 8, and 9.

GROUP IV

Purposes affecting instruction in the high school.—The expectation that the establishment of the junior college will *affect high school instruction favorably* (Purpose 18) rests, in the minds of those who propose it, on the

general fact that a higher unit of the educational system always exercises an influence on the standards of a lower unit where the two instiutions are closely associated. The single recognition of Purpose 19 refers to the better opportunity of *serving the interest of the more capable student* who arrives at his fourth high school year with less than four units of credit to earn for graduation. With junior college work offered in the high school, he may progress without loss of time.

GROUP V

Purposes affecting the community of location.—Purpose 20 appears to be one of the not uncommon expectations, namely, that the junior college will be able to *offer courses adapted to local needs,* the particular needs whenever mentioned being vocational or social. The last purpose (21) anticipates that the establishment of a junior college will *affect the level of cultural interests of the local community* to a degree now manifest in many college towns throughout the country.

III. SIGNIFICANCE OF THE FINDINGS

As already intimated, this survey of the current conceptions of the special functions of the junior college reveals the fact that, although the first purpose in the minds of its advocates is the offering of two years of standard college work acceptable to higher institutions, the hopes entertained for it far exceed this original service. The ambitions entertained for this new institution comprehend types of training better suited to the needs of the increasing proportion of the population which the junior college is expected to attract, especially general and occupational types of training adapted to the needs of students who will not continue their education beyond the work of these two years. All these new types of training are to be provided under conditions which will foster, better than can prevalent conditions, the intellectual and social welfare of individual students. Advocates of the junior college anticipate that its general introduction will affect profoundly, but in constructive ways, the organization and functioning of our system of education: it will permit the consummation of the secondary school, will assure the small college an unquestionable function in the educational system, and will encourage the university to differentiate its activities from those of the lower schools, much of whose work it is now called upon to do. They also look for the junior college, through courses offered and through its cultural influences, to be highly serviceable to the community of location. Other hopes are entertained for the junior college, but these are the predominant ones.

These aspirations outline an ambitious program for this new unit, so ambitious indeed that the special purposes as catalogued cannot be accepted forthwith. However, they furnish us a cross section of the educational

consciousness which has given rise to the movement and at the same time supply a set of tentative criteria, the validity of which is scrutinized in subsequent portions of this report. This scrutiny is provided in Parts II, III, and IV. These, with Part V, contain also materials pointing out proper lines of progress in order to achieve such of the special purposes as are found to be acceptable.

PART II

THE EDUCATIONAL FUNCTIONS OF THE JUNIOR COLLEGE

CHAPTER III

THE JUNIOR COLLEGE AND THE FIRST TWO YEARS OF COLLEGE WORK

I. The Purpose and Plan of the Chapter

The purpose.—The chapter immediately preceding shows that the claim put forward on which there is the largest approach to full agreement among the three groups of sources used is the *offering of two years of work acceptable to colleges and universities.* The meaning of this claim has already been made clear. It is the aim of this chapter to scrutinize this assumption as far as it concerns the giving of two years of "college work" in the sense of the first two years of work in the usual college of letters and science. The examination of the claim as it bears on the giving of the first two years of preprofessional curricula or of professional curricula which are begun in the freshman college year is deferred to the chapter next following.

The plan of the chapter is as follows: (1) presenting an analysis of curricular offerings as listed in junior college catalogues, (2) pointing out to what extent these listed offerings are in excess of the work actually going forward, and (3) comparing these offerings with the offerings and requirements of the first two years in standard colleges of letters and science both within and without the university.

II. Junior College Offerings[1]

Sources and method.—The sources of the data used in making this study were the bulletins or catalogues of junior colleges. These were supplied upon request sent to the heads of those schools listed as junior colleges in the *Educational Directory* of the Bureau of Education, and of certain other schools in which the writer has learned, through one source or another, at the time of making this study early in 1921 that junior college work was being offered. Of the total number of bulletins examined, twenty-three were issued by public, and thirty-five by private, junior colleges. Sixteen of the former group may be classed as municipal in the sense of being established as parts of city, township, or county school systems, the remainder being state institutions, four of which are normal schools. Fourteen of these public institutions are in North Central states, and seven are in California. Nineteen of the private group are schools for women. Nine of the private schools are in Missouri, eight are in north central states, and eighteen—a full half—are in southern states.

[1] Except for its final portions this section has been adapted from a study by the author published in the *School Review* 29: 586-92 and 668-78, October and November, 1921.

Little explanation of the method used in this study is required at this point, both because of its simplicity and because it may be inferred from the presentation of the findings as here reported. Mention should be made of the necessity of reducing all credits to the same unit—the semester hour. While there are other units in use, the one named is the most common. Where class periods of less than an hour's duration were reported, they were recomputed to conform to this predominant length. Full accuracy in estimating credit cannot be claimed for every instance tabulated, but there has been a close approximation to the true situation.

The classification of courses given in the catalogues was not always followed. For the sake of uniformity and consistency such changes of classification were made as listing household physics with courses in home economics under occupational training rather than under science, listing educational psychology with education and not with psychology, etc.

The presentation of the results of the study is divided into two main parts: first, an effort to give an impression of the total offering; second, a tabular description of the offerings in each main field.

The total offering and its distribution.—An impression of the total situation is afforded through an interpretation of Table VI, which presents, in addition to the average total number of semester hours in all courses offered and the range of this distribution (see foot of table), the average amount offered in each subject or subject group, the number of junior colleges including no offerings in each of the fields listed, the ranges for each subject, and the average percentage which the offering in each field is of the total offerings. These quantitative descriptions are provided for public junior colleges, private junior colleges, and all junior colleges in a single group.

The average total offering for all schools is shown to be somewhat in excess of two hundred semester hours. The averages for the two groups show a difference in favor of public institutions of something over sixty semester hours. The range of offering is very wide, being from 54 to 628 in the entire group of colleges.

When the data for municipal institutions alone in the public junior college group are used—that is, when data for state junior colleges established in normal schools and elsewhere are removed from the group—the average for public junior colleges drops to 219 semester hours, and the range becomes 94 to 411. Similarly, when from the data for private junior colleges are removed those for three institutions which were at the time offering work beyond the second year but claimed still to be performing the junior college functions,[2] the average for this group is reduced to 160.4, and the range becomes 54 to 335. The typical difference is just as apparent as when first given. The average for the total of 48 junior colleges, both public and private, thus remaining is 180 semester hours and the range is 54 to 411.

[2] In these instances, work on the junior college level only was included in the tabulations.

TABLE VI

Curricular Offerings of Public and Private Junior Colleges

Subjects and Subject Groups	Average Number of Semester Hours			Number Making No Offering			Range in Numbers of Semester Hours			Average Percentage of Total Offering		
	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private	All
English	17.7	16.0	17.1	1[a]	0	1	0– 33	6– 40	0– 40	6.9	8.8	7.9
Public speaking	3.0	2.8	2.9	13	24	37	0– 18	0– 27	0– 27	1.2	1.5	1.4
Ancient languages	12.8	19.5	16.9	8	1	9	0– 41	0– 47	0– 47	5.9	10.2	7.9
Modern foreign languages	42.1	38.6	40.0	0	0	0	18– 88	10– 90	10– 90	16.5	20.1	18.6
Mathematics	19.3	13.6	15.9	1	1	2	0– 33	0– 30	0– 33	7.6	7.1	7.4
Science	44.5	22.6	29.9	1	2	3	0– 99	0– 57	0– 99	17.5	11.8	13.9
Social subjects	27.5	18.9	22.3	1	0	1	0– 45	3– 43	0– 45	10.8	9.8	10.4
Bible and religion	0.0	3.9	2.3	23	14	37	0– 0	0– 12	0– 12	0.0	2.0	1.1
Philosophy	2.4	1.9	2.1	13	19	32	0– 10	0– 6	0– 10	0.9	1.0	1.0
Psychology	3.1	2.9	3.0	8	11	19	0– 9	0– 10	0– 10	1.2	1.5	1.4
Physical education	2.7	2.4	2.5	11	23	34	0– 12	0– 20	0– 20	1.0	1.3	1.2
Music	8.8	4.4	6.2	16	22	38	0– 88	0– 32	0– 88	3.5	2.3	2.9
Art	3.1	4.9	4.2	16	21	37	0– 24	0– 50	0– 50	1.2	2.6	2.0
Agriculture	5.8	1.1	3.0	17	33	50	0– 29	0– 34	0– 34	2.3	0.6	1.4
Commerce	26.7	0.5	10.9	6	33	39	0–114	0– 10	0–114	10.4	0.3	5.1
Education	5.3	9.7	7.9	17	6	23	0– 56	0– 43	0– 56	2.1	5.1	3.7
Engineering and industrial	16.6	10.7	13.1	6	29	35	0– 74	0–230	0–230	6.5	5.6	6.1
Home economics	9.8	16.0	12.5	11	14	25	0– 57	0– 83	0– 83	3.8	8.3	5.8
Other occupational	3.8	0.7	1.9	17	34	51	0– 47	0– 25	0– 47	1.5	0.4	0.9
All subjects	255.0	192.0	214.6	..	..	..	94–628	54–627	54–628	99.9	100.3	100.1

[a] This school offers "English of Commerce" which has been tabulated under commerce.

The columns of this table offer some important facts and interesting comparisons. To interpret the situation carefully it is necessary to give attention to the first, second, and last groups of these columns in conjunction. The comparisons would have been made more significant if space could have been spared for the distributions of amounts of work in each field, as well as for those measures which have been introduced. The method of interpretation will be illustrated by reference to the facts concerning English, the first subject listed. It may be seen that for all schools the average number of semester hours in the offering in this field is 17.1, and that the averages for the two groups are almost equal (first group of columns); that no school[3] fails to offer some work in this field (second group of columns); that the range in all schools is 0-40 hours with no great difference between the ranges for the two groups of schools (third group of columns); and that the average percentage of the total offering devoted to English is 8.0 for all schools, approximately one per cent less than this for public, and about as much greater for the private institutions. The difference of two per cent between the two groups of schools, notwithstanding the approximate equality of the average numbers of hours shown in the first group of columns, is explained by the difference in the average total number of semester hours in all lines of work already referred to. With a smaller average total in all subjects the same amount of work in any one subject would constitute a larger percentage.

The relative importance of the several subjects or subject groups in the offerings of all institutions may be judged by glancing down the third column of figures in the first and last groups of columns. These show that the schools tend to make much the largest single offering and the largest proportion of the total offering in the modern foreign languages. Next in order follow science, the social subjects, English, ancient languages, and mathematics. Fields receiving little emphasis measured in this way are public speaking, Bible and religion, philosophy, psychology, physical education, music, art, agriculture, and other occupational subjects. Lines of work whose extent of recognition lies between that for these two extremes are commerce, home economics, engineering and industrial courses, and education. By adding the percentages for the ancient and modern foreign languages it will be seen that more than one fourth of the total offering in all junior colleges is in the field of foreign language. By adding the percentages for subjects in the list beginning with agriculture and ending with other occupational, a group apparently designed to recognize occupational aspects of training, a total of slightly less than one fourth is obtained.

[3] See footnote to Table VI.

Comparisons of the figures for the two major types of institutions, public and private, bring out some interesting similarities and contrasts. The fields in which the average amounts of work are approximately equal are English (as has already been indicated), public speaking, modern foreign languages, philosophy, psychology, physical education, and art. In the cases of these fields, approximately equivalent proportions of each group of schools make no offering. For the reason given above in dealing with English as an illustration, these average percentages are somewhat greater for private than for public junior colleges.

In the fields of mathematics, science, the social subjects, music, commerce, agriculture, engineering and industrial, and other occupational courses, the average number of hours and the average percentages of the total are greater for public than for private junior colleges. On the other hand, in the four fields of ancient languages, Bible and religion, home economics, and education the private junior colleges tend to outdo the public institutions. The difference between the two groups as concerns Bible and religion is explained by the denominational character of most of the private schools. Their excess of offering in home economics grows out of the large proportion of women's institutions among them. The larger amount of education is explained by the location of the majority of them in southern states and the different standards of teacher-training there obtaining. In the states in which most public junior colleges are established, elementary school teachers are trained in state normal schools, and high school teachers receive most of their special occupational training in the last two years of the four-year college course.

Consistent with the contrasts pointed out are the numbers in each group of junior colleges shown not to be offering work in the subject groups named.

With the few exceptions noted, the comparison shows the public junior colleges tending to make the less conservative offering, and the private junior colleges tending to hold more closely to materials traditionally acceptable.

The offerings by subject groups and courses.—Because this chapter would otherwise run beyond publishable bounds, this section will be restricted to setting forth the variety of courses offered in each field and their frequency of occurrence in the junior college catalogues Although a tabular presentation of the amount of credit assigned to each course would add something to the description, the aspect presented is one of larger significance.

The portion of the description being made here is hardly to be regarded as complete without a statement concerning a peculiar difficulty encountered

in making the tabulations. This difficulty is one that concerns private colleges almost exclusively and has its source in the provision of certain special kinds of work in what seem to be departments more or less distinct and separate from those included in the junior college proper. Among these departments are commerce, home economics, music, art, expression, and physical culture. The work in these departments is rather commonly described in a portion of the catalogue distinct from that in which the junior college work and organization are set forth, and almost as frequently there is no statement of the academic level on which the work is pitched or of the extent of recognition, if any, made of this work if taken by a junior college student. A number of catalogues indicated specifically the amounts and the work in these departments which are acceptable. These instances lent themselves readily to tabulation. In every case, however, the catalogue was carefully canvassed for pertinent evidence, and wherever any definite statement appeared, or the context made it possible to compute the credit assigned, the data were included.

Perhaps the most notable example of this difficulty was in the field of commerce. Two of the private institutions announce an offering of commercial work for junior college credit, eleven list no offering of any kind, and the remaining twenty-two make some sort of offering in a more or less separate department but indicate nothing as to its acceptance for junior college credit. Almost without exception the courses listed are those offered in business colleges or in commercial departments in public high schools, such as shorthand (listed in 15 catalogues), typewriting (15), bookkeeping (12), office training (6), commercial law (6), penmanship (5), etc. The practice followed in this study was to exclude such work from the tabulations if no evidence appeared that the work is regarded as a part of the junior college offering or that credit in some amount is allowed for it. Doubtless, this may be a source of error in the tables which follow as well as in the averages, totals, etc., of Table VI, as credit may sometimes be allowed for such work without published announcement of the fact. Nevertheless, the absence of printed evidence in the catalogues that effort is being made to co-ordinate the special departments with the junior college should give assurance that the procedure followed in tabulation is a justifiable one. The procedure has the additional support of conclusions drawn from special inquiries made on this point during visitation to junior colleges.

Courses are introduced into the tables if they appear at least three times in the entire group of colleges, those mentioned only once or twice being named in the explanatory paragraphs. In order the better to appreciate the frequency of appearance of the courses, the reader will do well to bear in mind the number of junior college catalogues contributing to the arrays, i.e., fifty-eight in the entire group, twenty-three of which are from public, and thirty-five from private, institutions.

English and public speaking.—In addition to the courses in English listed in Table VII, the following were found to be named once or twice: narration, exposition, argumentation, description and narration, exposition and argument, oral and written composition, literary appreciation, English literature, modern English literature, American literature, "advanced" literature, Milton, Victorian poetry, Tennyson, Browning, English poetry and essays, the essay, Victorian prose, nineteenth-century prose, Shakespeare and modern drama, history of the drama, applied drama, drama and poetry, modern fiction, the American novel, current literature, and modern tendencies.

TABLE VII

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN ENGLISH AND PUBLIC SPEAKING

COURSES	PUBLIC	PRIVATE	ALL
English:			
Freshman rhetoric ("Composition" or "English")	21	34	55
Advanced composition or rhetoric	3	1	4
Survey or history of English literature	12	24	36
Masterpieces or types of English literature	3	2	5
History of American literature	6	5	11
English poetry	1	7	8
Romantic poetry	1	3	4
Nineteenth-century poets	0	3	3
Drama	3	6	9
Shakespeare	3	7	10
Modern drama	5	5	10
English novel	5	8	13
Short story	1	3	4
Public speaking:			
Public speaking	7	6	13
Expression	3	6	9
Interpretative reading	3	2	5
Story-telling	1	2	3

In public speaking the additional courses are: voice and diction, extempore speaking, debate, oratory, public address and parliamentary procedure, play interpretation, dramatic literature, dramatics, Shakespearean reading, stage art (play coaching), and pantomime.

Foreign languages.—Table VIII indicates that the foreign language most frequently recognized in the offerings is French. In terms of frequency of recognition, the other languages follow in the order here given: Latin, Spanish, German, and Greek. Italian, Portuguese, and Russian are each

offered in one or two schools. It is worth noting that high school Latin is not uncommonly offered for junior college credit. However, this is usually in telescoped form.

Courses offered once or twice are Greek: Homer, New Testament, and Greek or classical mythology; Latin: elementary Latin, Caesar, Latin authors, Roman literature in translation, Roman antiquities, and a composite course; French: drama, scientific, commercial, conversation, and composition; Spanish: modern literature, literature, Spanish-American literature, modern and contemporary novel and drama, and commercial; German: literature, classical literature, dramas, survey or history of German literature, composition, scientific, and a variable course.

TABLE VIII

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN FOREIGN LANGUAGES

COURSES	PUBLIC	PRIVATE	ALL
Greek:			
First year	5	11	16
Second year	2	8	10
Greek or classical mythology	2	1	3
Latin:			
First year (college)	14	34	48
Second year (college)	8	27	35
Beginning Latin and Caesar	3	0	3
Cicero's *Orations* and Virgil's *Aeneid*	3	1	4
Cicero's *Orations*	3	8	11
Virgil's *Aeneid*	3	7	10
Composition	3	5	8
French:			
Elementary or first year	20	32	52
Intermediate or second year	20	29	49
Advanced	3	11	14
Literature	3	9	12
Nineteenth-century literature	1	3	4
History or survey of French literature	3	4	7
Spanish:			
Elementary or first year	20	26	46
Second year	18	22	40
Advanced	3	4	7
German:			
Elementary or first year	7	14	21
Intermediate or second year	6	11	17
Advanced	2	5	7

TABLE IX

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN MATHEMATICS

COURSES	PUBLIC	PRIVATE	ALL
Higher algebra	10	3	13
Solid geometry	6	21	27
Trigonometry	12	32	44
Solid geometry and trigonometry	3	0	3
College algebra	10	25	35
Analytic geometry	15	26	41
Differential calculus	7	9	16
Integral calculus	5	7	12
Differential and integral calculus	11	0	11
Plane analytic geometry and differential calculus	4	0	4

TABLE X

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN SCIENCE

COURSES	PUBLIC	PRIVATE	ALL
Biology, etc.:			
General biology	3	6	9
General botany	21	12	33
Bacteriology	7	3	10
General zoology or animal biology	18	12	30
Vertebrate zoology	1	2	3
Human physiology	2	8	10
Human physiology and hygiene	1	2	3
Heredity, evolution, and genetics	5	1	6
Chemistry:			
General or general inorganic	13	29	42
Qualitative	9	10	19
Inorganic and qualitative	9	2	11
Quantitative	11	1	12
Organic	12	7	19
Physics:			
General	14	11	25
Mechanics and heat	4	1	5
Sound, light, and electricity	2	1	3
Geology:			
Geology	3	1	4
Physiography	5	2	7
Astronomy	3	1	4

Mathematics.—In addition to courses which are merely combinations of those divisions of mathematics which are listed in Table IX, courses in only one or two junior colleges are review arithmetic, elementary algebra, plane geometry, solid analytic geometry, unified mathematics, and history of mathematics.

Science.—It appears from Table X that the fields of biology and chemistry are those most commonly recognized in junior college courses, that physics also is frequently offered, and that geology and astronomy are only occasionally found. Except in chemistry, the proportions of the private institutions offering work in each of the fields are notably smaller than those of the public institutions, and even in this subject the private institutions lag behind in the advanced courses.

TABLE XI

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN SOCIAL STUDIES

COURSES	PUBLIC	PRIVATE	ALL
History:			
Ancient	1	3	4
European	4	18	22
Medieval European	4	0	4
Modern European	17	11	28
Western Europe	1	4	5
English	11	15	26
American or United States	14	24	38
Economic history of the United States	2	1	3
Economic history	2	1	3
Political science:			
Political science	5	0	5
American government	8	5	13
Comparative government	3	1	4
Economics:			
Principles of or introduction to economics	18	20	38
Rural economics	3	0	3
Public finance and taxation	3	0	3
Sociology:			
Sociology or introduction to sociology	13	18	31
Labor problems	3	0	3

Courses offered only once or twice are biology: advanced botanical work, structural botany, physiological and ecological botany, systematic botany, field botany, plant genetics and plant production, applied bacteriology, advanced zoology, invertebrate zoology, field zoology, economic zoology, entomology, embryology, vertebrate anatomy, mammalian anatomy, and human anatomy; chemistry: advanced general and quantitative, qualitative

and quantitative, descriptive chemistry, and "practical" chemistry; physics: elementary, advanced, radio-telegraphy, applied, and problem course; geology: dynamical and structural, historical, mineralogy, and geology and mineralogy.

The social subjects.—Courses in history, as indicated in Table XI, constitute the predominant offering in the field of social studies. The field least commonly recognized is political science.

TABLE XII

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN PHILOSOPHY, PSYCHOLOGY, AND BIBLE AND RELIGION

COURSES	PUBLIC	PRIVATE	ALL
Philosophy:			
Ethics	4	13	17
Logic	7	10	17
Psychology:			
Psychology	15	24	39
Experimental psychology	1	3	4
Bible and religion:			
Bible as literature	0	6	6
New Testament	0	3	3
Life of Christ	0	8	8
Acts and Epistles	0	3	3
History of Hebrews	0	3	3
Fundamental moral and religious values	0	5	5

Courses offered less frequently than those listed in the table are history: general, Greek civilization, modern, English constitutional, constitutional, history of the West, current history, and contemporary civilization; political science: civil government, state and local government, municipal government and elements of law; economics: economic problems; sociology: problems of sociology, modern social reform movements, rural sociology, the family, and anthropology.

Philosophy, psychology, and Bible and religion.—The only courses in the field of philosophy in addition to the two named in the table, ethics and logic, are philosophy and history of philosophy. In psychology the additional courses are social, experimental and social, industrial and social, and business psychology. Courses along religious lines are offered only in private institutions. Those offered once or twice only are Bible, Christian evidences, Old Testament, founders and rulers of ancient Israel, Christian life, Christian religion, missions, and a composite course.

Physical education.—Work in physical education in addition to courses listed in Table XIII includes first aid, corrective gymnastics, military training, games, folk dancing, aesthetic dancing, theory of physical training, and applied work.

TABLE XIII

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN PHYSICAL EDUCATION

COURSES	PUBLIC	PRIVATE	ALL
Hygiene	5	2	7
Gymnasium or physical training	11	11	22
Athletics or sports	2	2	4
Swimming	0	3	3
Playgrounds	0	5	5

The fine arts.—Of the two fields included in Table XIV, music is the more frequently offered. Courses in music listed once or twice in the catalogue are fundamentals, ear-training, composition, harmony and composition, sight singing, sight singing and ear-training, violin, stringed instruments, orchestration, instrumentation, choir, glee club and community music.

TABLE XIV

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES IN THE FINE ARTS

COURSES	PUBLIC	PRIVATE	ALL
Music:			
History of music	4	10	14
Harmony	6	9	15
Counterpoint	2	3	5
Appreciation	2	4	6
Musical analysis	0	3	3
Voice	2	2	4
Piano	2	2	4
Orchestral practice	2	1	3
Chorus	2	1	3
Art:			
Introduction to art	2	5	7
History of art	0	7	7
History of painting	0	4	4
Free-hand drawing	3	2	5
Construction	1	2	3
Design	2	2	4

In art such courses are art, art appreciation, principles of art, principles of representation, history of French painting, history of English painting, historic styles, domestic architecture, history of architecture, perspective and interior decoration, line drawing, light and shade, antique drawing, design and composition, theory of color, furniture design, woodwork design, painting, drawing and painting, china painting, interior decoration, lettering styles, lettering, commercial art, stagecraft, bookbinding and clay work, modeling and pottery.

Occupational training.—The variety of courses in agriculture appearing but once or twice in the catalogue descriptions is very wide, some — not all — of which are farm crops, crop production, cereal crops, forage, root and miscellaneous crops, cotton-classing, vegetable-gardening, horticulture, citriculture, pomology, agricultural physics, fertilizers, livestock, dairying, horses, stock-judging, feeds and feeding, breeds and breeding, poultry, plant diseases, agricultural chemistry, farm management, and farm mechanics.

In commerce some additional courses are spelling, calculating machine, cost accounting, auditing, advertising, foreign trade, domestic trade, corporation finance, transportation, business organization, and employment management.

In education are found, as well as those listed, courses in history of manual arts, history and principles of education, psychology of elementary school subjects, philosophy of education, school administration, school law, and school hygiene, as well as special methods in a wide range of teaching subjects.

In the engineering and industrial group there are various kinds of additional shop courses, such as forge, foundry, sheet metal, automobile, and tractor; courses in drawing and design, such as auto, projection, kinematic, and electrical. There are also courses in engineering principles, mechanism and hydraulics, engineering physics, machine-tool analysis, gear and cam constructon, steam turbines, heating and ventilation, D.C. machines, A.C. machines, illumination and road-building.

In home economics are such additional courses as nutritional physiology, serving, institutional cookery, lunchroom management, tailoring, applied design, textiles and handwork, the family, child welfare, care and feeding of infants, laundry, housewifery, household chemistry, and household accounts.

A few additional courses in library training are also to be found, and courses in journalism, pharmacy, and nursing are offered in one or two schools.

The listed offerings and the work going forward.—It is to be expected that the amount of work and the numbers of courses reported in the catalogues are sometimes in excess of what is actually being taught. Those who have had contact with schools during their early aspirational stages will know that classes in some courses do not always materialize. As the visits made to junior colleges included a number of institutions represented in the analysis just reported, it was possible to make a comparison of the work in progress during the school year and that listed in the catalogue, and thereby estimate the extent to which the former falls below the latter.

TABLE XV

NUMBERS OF JUNIOR COLLEGES OFFERING CERTAIN COURSES OF AN OCCUPATIONAL CHARACTER

COURSES	PUBLIC	PRIVATE	ALL
Agriculture:			
Soils and soil technology	3	0	3
Poultry husbandry	2	1	3
Commerce:			
Penmanship	3	0	3
Business arithmetic	3	1	4
Shorthand	6	1	7
Typewriting	6	1	7
Shorthand and typewriting	3	0	3
Office training	4	0	4
Bookkeeping	4	0	4
Special sets	3	0	3
Accounting	9	1	10
Business English or "English of commerce"	3	0	3
Salesmanship	3	0	3
Industrial and commercial geography	4	0	4
Markets and prices	3	0	3
Theory of investments	5	0	5
Money and banking	5	0	5
Commercial law	9	1	10
Education:			
Introduction to education	1	2	3
History of education	7	20	27
Principles of education	5	5	10
Educational psychology	3	16	19
Methods	3	16	19
School or classroom management	1	13	14
Observation and practice teaching	0	4	4
Special methods in home economics	0	4	4
Special methods in public school music	1	2	3
Sunday school methods	0	4	4

TABLE XV—*Continued*

Courses	Public	Private	All
Engineering and industrial:			
Shop work—wood	3	1	4
Pattern work	4	2	6
Shop work—forge and machine	5	0	5
Machine shop	3	1	4
Automobile and gas engine laboratory	0	3	3
Mechanical drawing	9	1	10
Machine drawing	2	2	4
Machine design	3	1	4
Architectural drawing	1	2	3
Elements of analysis	5	0	5
Descriptive geometry	11	2	13
Surveying	9	5	14
Analytical mechanics	2	1	3
Materials of construction	3	0	3
Home economics:			
Selection and preparation of foods	5	19	24
Food study or food problems	4	9	13
Dietetics	4	8	12
Cookery	3	0	3
Preparation and service of food	1	8	9
Chemistry of foods	1	2	3
Sewing (or plain sewing)	1	4	5
Selection and construction of clothing	4	8	12
Elementary clothing	0	5	5
Dressmaking	3	1	4
Millinery	1	6	7
Household art	2	1	3
Costume or dress design	2	2	4
Dressmaking and costume design	0	4	4
Textiles	0	4	4
Sewing or clothing and textiles	0	4	4
Art needlework	1	2	3
Home decoration	1	2	3
Home-furnishing	1	2	3
House- or home-planning	1	3	4
Home nursing	1	6	7
Home management	2	7	9
Household problems	4	4	8
Household physics	2	1	3
Library:			
Library science	4	0	4

The number of junior colleges visited on which the making of such a check was possible included nine public and five private—a total of fourteen schools. This constitutes almost a fourth of the fifty-eight junior colleges represented in the data so far presented in the current chapter, a proportion sufficiently large to be of considerable significance in passing judgment on the problem in hand.

The following columns show the total numbers of semester hours of credit represented by the courses listed in the catalogues of each of the junior colleges visited and the correction necessary in view of courses listed which are not going forward or courses going forward in excess of the published offerings:

Public Junior College	Listed Offering	Correction
A	94	+5
B	104	+8
C	114	—32
D	177	—60
E	210	—25
F	231	None
G	309	None
H	378	—78½
I	408	—10
Private Junior College	**Listed Offering**	**Correction**
A	76	None
B	170	—17
C	196	—6
D	208	+6
E	335	—36

Of the public junior colleges there are five with less work going forward during the year than was listed, two without a difference in this respect, and two with more work going forward than was listed. As the total amount of work listed in all the nine catalogues was 2025 semester hours and the algebraic sum of corrections was 192½, it appears that the average per cent of unfavorable difference is 9.5. If this difference were found to apply to all public junior colleges, it would mean a reduction of the average of 255 shown at the foot of the first column of figures in Table VI by almost 25 semester hours, bringing it down to 225 or 230 semester hours. Of the private junior colleges, there are three with less work going forward, one

without a difference, and the other with an increase. The total amount of work listed is 985 semester hours, while the sum of the corrections is 53 semester hours, an average of 5.4 per cent. If this difference were found to apply to all junior colleges of the private group, it would mean a reduction of the average total of 189.7 semester hours (see Table VI) to something like 180 hours of work actually going forward. While reductions in both groups are appreciable, they cannot be regarded as large enough to discredit the findings of the study made.

A tabulation of the particular courses not going forward discovers that the total number for both public and private institutions, not making allowance for additional courses going forward and not in published lists, is 65. These are scattered throughout the entire offering and manifest little or no tendency to locate in particular fields or especially in the more advanced subjects. The only courses appearing twice or oftener among these omissions are: Horace (in second-year Latin), 2; "College" French, 2; calculus, 2; general geology, 2; American history, 3; English history, 2; introduction to religious education, 2. All the remaining fifty are courses omitted only once each.

It seems safe to conclude that neither the average amount of reduction nor the extent of disappearance of particular courses is large enough to warrant discrediting to any large extent the results of any subsequent conclusions involving the description of the junior college offerings that has been given.

III. College Offerings in Freshman and Sophomore Years

The colleges represented.—The next step in the study of the feasibility of giving in junior colleges the first two years of college work is a comparison of the analysis of work just presented with that available during freshman and sophomore years in standard colleges of liberal arts. To arrive at some adequate description of the latter a similar analysis was made of the work in a large number of such institutions, 114 being of the separate college type and 20 of them colleges of liberal arts in institutions of the university type. The latter group was included to afford an additional comparison and to note important differences, if any, between work offered and required in separate colleges and colleges of letters and science in universities. While not all the colleges in the former group are without associated units offering professional training, no college has been included in which the liberal arts student body did not embrace the great majority of the student body. All institutions are on approved lists of some recognized standardizing agency. Except in sections where the lists of separate colleges are complete or almost so, as for New England and the Western

states, resort was had to a random selection. Both colleges and universities were selected with a view to securing lists geographically representative of the entire country.

The method of tabulation.—College catalogues were used in making the analysis presented, as was done in the case of the junior colleges. With one exception these were either issues for 1920-21 or 1921-22. In this instance the catalogue for the year 1919-20 was used.

Although most of the catalogues make clear in one way or another the classification of students to which the courses listed are open, there were instances of omissions of indications of this sort. Where such omissions affected entire catalogues, the institution had to be left out of account. This reduced the number of institutions listed for inclusion from an original number somewhat in excess of that already referred to. In other instances it was found necessary to estimate how far up a subject sequence a student could go assuming he had a typical amount of credit toward admission in that subject.

The amounts and percentages of work compared.—The results of the tabulations just described have been introduced into the proper columns of Table XVI which has been arranged to expedite comparison of the extent and character of the offerings in junior colleges and in the first two years of standard colleges of liberal arts. It will be noted that the columns of figures are divided into two groups, one presenting the average numbers of semester hours in each subject or subject group and the other the average percentages in the same fields. Differences between, and similarities of, one type of junior college used as an illustration—the public—and colleges of liberal arts, both separate institutions and in universities, are made somewhat more apparent in Figures 5 and 6.

With one exception the *amounts* of work offered in the colleges of liberal arts are seen to exceed those in junior colleges. The difference is especially notable for the colleges in universities, but there are also appreciable differences for the separate units. The only academic subject in which the amounts are almost equivalent is mathematics. Here the offerings in public junior colleges, at least, compare favorably with those in the other institutions. The single exception of excess for the new unit is in the materials that have been grouped under occupational. These include agriculture, commerce, engineering and industrial, home economics, and other occupational. Education, although in an important sense belonging under this head, has been included in Table XVI with philosophy, psychology, etc.

TABLE XVI

AVERAGE NUMBERS OF SEMESTER HOURS AND PERCENTAGES OF TOTAL OFFERINGS IN JUNIOR COLLEGES AND IN THE FIRST TWO YEARS OF COLLEGES OF LIBERAL ARTS DEVOTED TO THE GENERAL SUBJECTS AND SUBJECT GROUPS

SUBJECT OR SUBJECT GROUP	AVERAGE NUMBER OF SEMESTER HOURS					AVERAGE PER CENT OF TOTAL OFFERING IN JUNIOR COLLEGE YEARS				
	Junior Colleges			Separate Colleges	Universities	Junior Colleges			Separate Colleges	Universities
	Public	Private	All			Public	Private	All		
English and public speaking	20.7	19.7	20.0	34.9	54.6	8.1	10.3	9.3	10.9	10.2
Foreign language	54.9	58.1	56.9	105.7	147.6	21.5	30.3	26.5	33.4	27.7
Mathematics	19.3	13.6	15.9	20.4	22.7	7.6	7.1	7.4	6.4	4.2
Science	44.5	22.6	29.9	72.5	143.0	17.5	11.8	13.9	22.7	26.9
Social studies	27.5	18.9	22.3	37.3	64.3	10.8	9.8	10.4	11.7	12.1
Philosophy, psychology, etc.	10.8	18.4	15.3	21.9	27.1	4.2	9.6	7.1	6.9	5.1
Fine arts	11.9	9.3	10.4	12.6	33.6	4.7	4.9	4.8	4.0	6.3
Physical education and military training	2.7	2.4	2.5	4.4	14.0	1.0	1.3	1.2	1.4	2.5
Occupational	62.7	29.0	41.4	9.2	25.4	24.6	15.1	19.3	2.9	4.8
All subjects	255.0	192.0	214.6	318.9	532.3	100.0	100.2	99.9	100.3	99.8

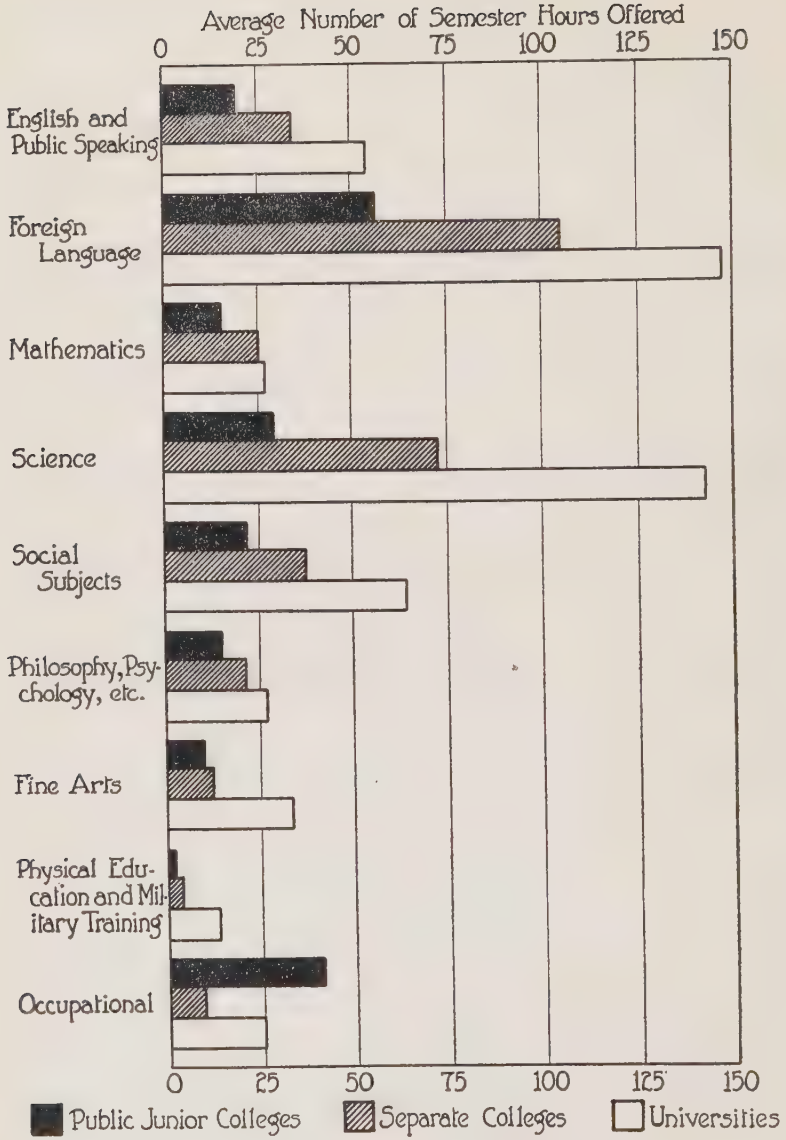

Figure 5

Average number of semester hours offered in each subject or subject group in public junior colleges and in the first two years of separate colleges and of colleges of liberal arts in universities

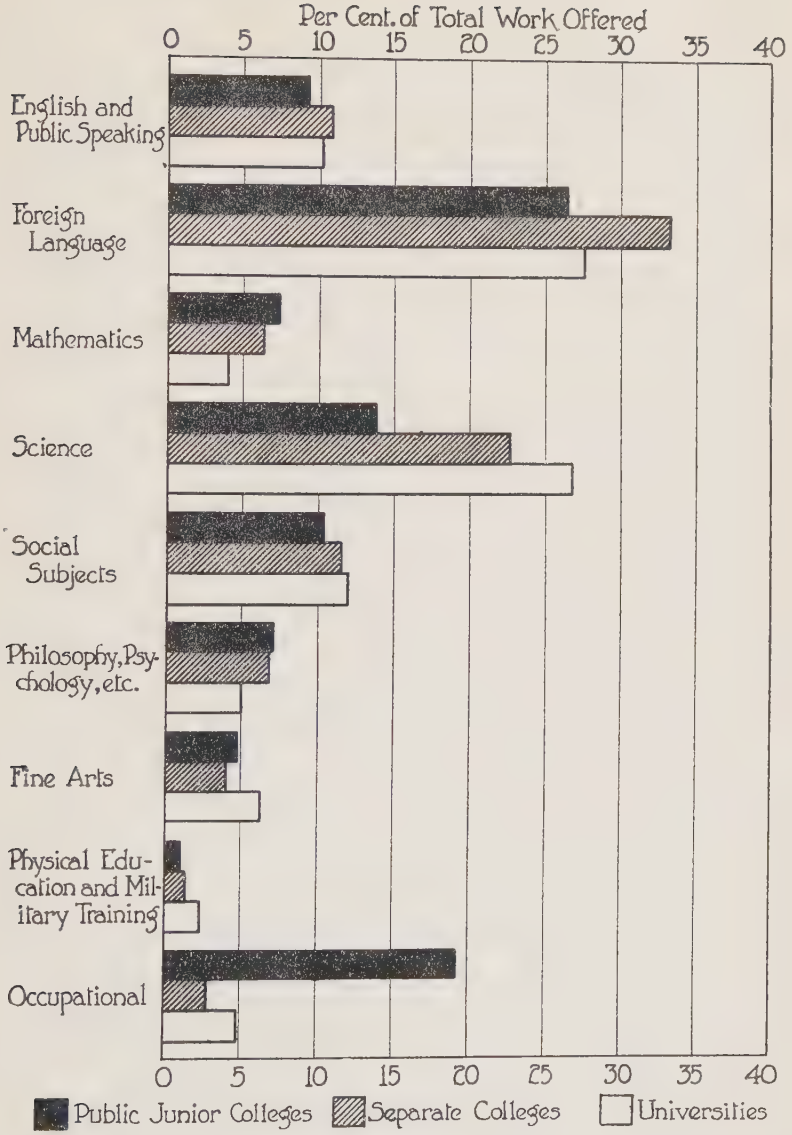

Figure 6

Percentages which the offerings in each subject or subject group are of the total offering in public junior colleges and in the first two years of separate colleges and of colleges of liberal arts in universities

The averages of total numbers of semester hours of work offered as given at the foot of Table XVI are in harmony with expectations warranted by the data as to individual subjects or subject groups. The total college offerings in the first two years exceed those in all junior colleges by fully 50 per cent. The excess over public junior colleges is somewhat smaller. The offerings in these years in university colleges of liberal arts seem to be more than double those in public junior colleges. When it is recalled that the averages for junior colleges are to some extent reduced after subtractions are made for courses listed but not going forward, the comparison becomes even more unfavorable. Were there no qualifying considerations, such as are afforded below, the results of the comparison so far made would operate as a serious argument against the feasibility of the junior college plan.

The percentage distributions of the work offered show a much greater approximation to equivalence in the types of institutions being compared. Subject groups in which the colleges and universities have significant excesses are foreign language and science, the separate colleges leading in the former and the universities in the latter. Private institutions tend to bring up the average for junior colleges in the former group, while they tend to pull it down in the latter. Many private institutions are without equipment for college courses in science other than general inorganic chemistry, while this is not as charactertistic of institutions of the public type. The percentage distributions of academic subjects show that the junior colleges are endeavoring to make and achieving at least consistent progress in the direction of affording curricular materials that will meet the requirements here being considered.

The proportion of occupational materials in junior colleges far eclipses those in the other institutions. The smaller proportion in private than in public junior colleges would be more than made up if work in the field of education were removed from the group in which it has been included and introduced at this point. The explanation of this larger proportion for junior colleges is to be found in the wider service that some junior colleges are endeavoring to render than that of merely providing the first two years of work of colleges of liberal arts. For example, some public institutions are also endeavoring to give the first two years of engineering or other professional curricula, while there are occasional examples in both groups of efforts in the direction of affording some occupational training for those who do not plan to continue their education beyond the junior college level.

A study of the range of work actually taken.—As a canvass of offerings only may hardly be looked upon as an adequate test of whether junior colleges do or can qualify on the aspiration of providing the first two years of college work, a study has been made, and is here reported, of the work

actually taken by a group of 200 randomly selected students during their first two years of attendance in a college of liberal arts, in this instance the College of Science, Literature, and the Arts, of the University of Minnesota. The same students and the same work are concerned as in a subsequent chapter dealing with the extent to which work taken during the first two college years is secondary or collegiate in character. The aim of the special inquiry in this instance is to secure some measure of the degree to which all the work actually done by these students is or is not spread evenly over the entire range of work included in students' curricula.

The first column of Table XVII gives the list of subjects and subject groups considered. The second presents the total numbers of quarter hours of credit[4] in these subjects covered by all the work taken during the first two years by the 200 students. The third shows the total range of credit represented by the courses taken. For instance, courses covering a total range of 86 different credit hours if taken by a single student are represented in the 3711 credit hours of work taken in English by the 200 students. This range is arrived at by adding the credit of all the different courses taken. The remaining columns divide into two groups. The first of these shows the range in quarter hours represented by courses taken by 2 per cent or less of the total number of students, i.e., by four students or less, the per cent these are of the total range as just described, the range in quarter hours represented by courses taken by 5 per cent or less of the total number of students, i.e., by ten students or less, and the per cent these are of the total range. For instance, for English, a range of 59 quarter hours is represented by the different courses taken by 2 per cent or less of the 200 students, and this number is 68.6 per cent of the 86 different quarter hours represented in the total of 3711 referred to. The second group of columns gives the totals of credit covered by courses taken at 2 per cent or less and 5 per cent or less of the 200 students, as well as the percentages which these amounts of credit are of the totals in the first column of figures in the table.

The interpretation of the columns in their inter-relationships may perhaps be most easily explained by referring to the figures for mathematics. A total of 540 quarter hours of work in this field[5] were taken by the 200 students. The courses represented included higher algebra (5 credits), solid geometry (5 credits), college algebra (5 credits), trigonometry (5 credits), analytic geometry (5 credits), and calculus (5 credits). These

[4] A quarter hour is the equivalent of two thirds of a semester hour.

[5] The computation does not include the courses in commercial algebra, and the mathematics of investment, which were introduced under occupational.

TABLE XVII

TOTAL AMOUNTS OF CREDIT IN CERTAIN SUBJECTS AND SUBJECT GROUPS TAKEN DURING THEIR FIRST TWO YEARS BY 200 STUDENTS ENTERING THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS OF THE UNIVERSITY OF MINNESOTA; THE TOTAL RANGE OF CREDIT HOURS REPRESENTED BY THE COURSES TAKEN; THE RANGE REPRESENTED BY COURSES TAKEN BY 2 PER CENT OR LESS AND 5 PER CENT OR LESS OF ALL STUDENTS; AND THE TOTAL CREDIT COVERED BY COURSES TAKEN BY 2 PER CENT OR LESS AND 5 PER CENT OR LESS OF ALL STUDENTS

SUBJECT OR SUBJECT GROUP	TOTAL QUARTER HOURS OF CREDIT	TOTAL RANGE REPRESENTED IN QUARTER HOURS	RANGE REPRESENTED BY COURSES TAKEN BY				CREDIT COVERED BY COURSES TAKEN BY			
			Two Per Cent or Less		Five Per Cent or Less		Two Per Cent or Less		Five Per Cent or Less	
			Quarter hours	Per cent	Quarter hours	Per cent	Quarter hours	Per cent	Quarter hours	Per cent
English	3,711	86	59	68.6	68	79.1	68	1.8	149	4.0
Public speaking	375	19	...	...	...	...	...	...	...	...
Foreign language	3,733	347	218	62.8	262	75.5	398	10.6	959	25.4
Mathematics	540	30	15	50.0	15	50.0	25	4.6	25	4.6
Science	2,284	180	71	39.4	91	50.6	99	4.3	206	9.0
Social studies	4,500	186	62	33.3	79	42.5	109	2.4	255	5.7
Philosophy, psychology, etc.	1,272	53	11	20.8	22	41.5	14	1.1	90	7.1
Fine arts*	352½	85½	43½	50.9	76½	89.5	54½	15.5	259½	73.3
Occupational	728	84	61	72.6	66	78.6	125	17.2	155	21.3
All subjects	17,495½	1,070½	540½	50.5	679½	63.5	838	4.8	2,098½	12.0

* Music only.

courses may be seen to represent a total range of thirty credit hours. Three of them, viz., solid geometry, analytic geometry, and calculus, were tabulated as being taken by 2 per cent or less of the 200 students. As these represent a range of fifteen credits, they constitute 50 per cent (see fourth column of figures) of the total range of work in this field. As these three courses were taken by 1, 3, and 1, respectively, of the 200 students, the total amount of credit covered by them is 25 quarter hours (see the seventh column of figures). This amount is 4.6 per cent (eighth column) of the total of 540 hours taken in mathematics. The three remaining courses, higher algebra, college algebra, and trigonometry, registered 37, 19, and 47, respectively of these students, involving 515 credit hours, or 95.4 per cent of all the work taken in mathematics. There is thus a marked contrast between the proportion of range of work in mathematics represented in the courses taken by 2 per cent or less of the students and the proportion of the total credit covered by these courses when weighted by the number of students by whom taken, as a half of the credit range of the courses accounts for less than a twentieth of the total credit involved.

An examination of the data for the remaining subjects and subject groups in Table XVII—a process that is facilitated by Figure 7—discloses similar, although not always equivalent contrasts. The only subject groups that show larger proportions of total credit for courses infrequently taken are foreign language, fine arts, and occupational. The difference in the cases of fine arts and occupational are primarily attributable to the fact that seldom does a large number of students take *any single* course in these lines.

Attention has so far been directed to courses taken by 2 per cent or less of the students. When courses pursued by 5 per cent or less are included the proportions of the total credit covered increase notably only in the three subject groups, two of these being music and the occupational. Conclusions drawn for the problem in hand would have additional corroboration from the contrasts in the columns concerned.

The figures for all subjects at the foot of the table show that in the total of 17,495½ quarter hours of work taken by the 200 students a *range* of 1070½ hours of courses is represented. For those accustomed to the semester plan, it may be more meaningful to say that a total range of 713.7 semester hours of different courses is represented. This may be seen to exceed the range of offering in the average college by almost 400 hours and that of the average university by somewhat less than 200 hours (Table XVI). However, of this total range, 540½ quarter hours, or slightly more than 50 per cent, are taken by 2 per cent or less and 679½ quarter hours, or 63.5 per cent, by 5 per cent or less of the 200 students. In terms of semester hours this means that, if the courses represented were removed from the offering in this institution, the total represented in remaining

courses taken by larger numbers of students would be reduced to 353.4 and 260.7 hours, respectively. By so doing, only 4.8 per cent, and 12.0 per cent, respectively, of the total credit would be involved. It does not seem to be beyond the bounds of reasonable expectation to assume that the total offering of regular college work in junior colleges can be kept to something like 250 semester hours without sacrificing the interests of those who contemplate completion of a four-year liberal arts curriculum. The lower total of

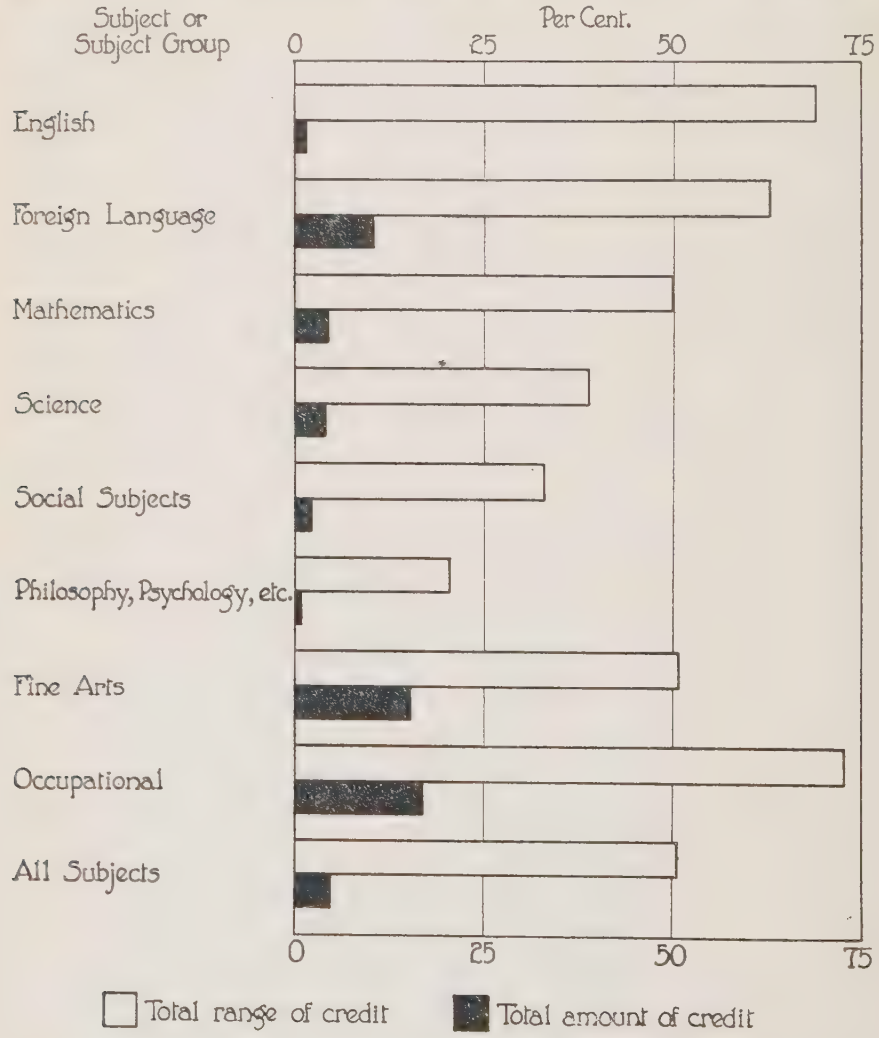

Figure 7

Percentages (a) of the total range of credit represented by courses taken by 2 per cent or less of 200 students and (b) of the total amount of credit in all courses represented which are covered by such courses

semester hours just referred to, 260.7, is not far in excess of the average for public junior colleges, even when this is reduced by 10 per cent for courses not going forward. In view of the recency of the junior college movement and the modest enrolment of many units, with relatively small proportions in the second year, and in view of the fact that the offerings to freshmen and sophomores in standard colleges as summarized in Table XVII are padded by courses seldom, if ever, taken by underclassmen, the writer feels secure in concluding that the stronger junior colleges will be able shortly, if they are not already prepared, as far as the offering is concerned, to achieve the aspiration of providing the first two years of college work.

An illustration in detail of the difference between college and junior college offerings.—To afford further comparison in detail of college and junior college offerings, so as to secure a more definite description of similarities and differences, Table XVIII has been prepared. The junior college portions of this table are drawn from Table X and the descriptive portions accompanying it. The material for the remaining columns was taken from a study of the offerings in eighty-six randomly selected colleges, all of them on the list of separate colleges represented in Table XVI. Distributions similar to the one presented for biology have been prepared, but as they show nothing not illustrated in Table XVIII, to present them here would be little short of gratuitous. It may be desirable to point out, nevertheless, that if one other science, i.e., chemistry, had been used, comparison would have been more favorable to the junior college.

The distribution for colleges includes only those courses found open to underclassmen at least three times in the eighty-six catalogues examined. It does not show almost eighty courses found once or twice. On the other hand, it shows almost all the junior college courses, excepting a few found once or twice in the fifty-eight junior college catalogues which appeared less than three times in the college list.

In the upper portions of the table there is something like correspondence in the percentages for colleges and for junior colleges—nothing like identity, of course, but enough to serve as evidence that the junior college can and does offer the fundamental and elementary courses. There is even an approach to correspondence in courses like bacteriology and heredity and evolution. It is when attention is directed to the advanced differentiations, most of them in the lower two thirds of the list, that the junior college offerings are put in an unfavorable light. The new unit has, however, at least a scattered distribution in these differentiations.

In seeking for the significance of this attenuation, we should not lose sight of the fact that the distribution, even for the larger number of colleges, is hardly better than scattered. This situation would be even more apparent if the large number of additional courses offered once or twice were also

listed in the table. It is doubtless in large part owing to the want of sufficient standardization as to place and content of college courses. Many colleges have yet to give consideration to tendencies in some higher institutions of distinguishing between what is appropriate for underclassmen and what is appropriate for upperclassmen. Moreover, from what has been shown above, we may judge that few, if any, freshmen or sophomores are likely

TABLE XVIII

NUMBERS AND PERCENTAGES OF JUNIOR COLLEGES AND SEPARATE COLLEGES OF LIBERAL ARTS OFFERING CERTAIN COURSES IN BIOLOGY

COURSE	PUBLIC JUNIOR COLLEGES		PRIVATE JUNIOR COLLEGES		ALL JUNIOR COLLEGES		COLLEGES	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
General biology	3	13.0	6	17.1	9	15.5	55	64.0
General botany	21	91.3	12	34.3	33	56.9	39	45.4
Bacteriology	7	30.4	3	8.6	10	17.2	27	31.4
General zoology	18	78.3	12	34.3	30	51.7	52	37.2
Vertebrate zoology	1	4.3	2	5.7	3	5.2	45	52.3
Human physiology	2	8.7	8	22.9	10	17.2	21	24.4
Physiology and hygiene	1	4.3	2	5.7	3	5.2	14	16.3
Heredity, evolution, etc.	5	21.7	1	2.9	6	10.3	21	24.4
Physiology, hygiene, and sanitation	..	..	..	..	..	..	6	7.0
Plant physiology	..	..	..	..	..	..	14	16.3
Economic botany	..	..	..	..	..	..	4	4.7
Field botany	2	8.7	..	..	2	3.4	3	3.5
Plant morphology	..	..	..	..	..	..	10	11.6
Plant physiology and morphology	..	..	..	..	..	..	4	4.7
Plant ecology	..	..	..	..	..	..	5	5.8
Systematic botany	1	4.3	..	..	1	1.7	3	3.5
Histology	..	..	..	..	..	..	14	16.3
Taxonomy	..	..	..	..	..	..	3	3.5
Trees, shrubs, and flowers	..	..	..	..	..	..	5	5.8
Dendrology	..	..	..	..	..	..	3	3.5
Embryology	1	4.3	..	..	1	1.7	7	8.1
Invertebrate zoology	..	..	2	5.7	2	3.4	17	19.8
Entomology	1	4.3	..	..	1	1.7	11	12.8
Ornithology	..	..	1	2.9	1	1.7	9	10.5
Mammalian anatomy	..	..	1	2.9	1	1.7	4	4.7
Advanced physiology	..	..	..	..	..	..	5	5.8
Sanitary science	..	..	..	..	..	..	4	4.7

to register for these advanced differentiations. There is little occasion for questioning the practicability of offering in strong junior colleges the fundamental courses and a few of the courses next in sequence, especially if there is adequate standardization in colleges and universities of courses and year places for these courses.

TABLE XIX

AVERAGE NUMBERS OF SEMESTER HOURS AND PERCENTAGES OF WORK IN CERTAIN SUBJECTS AND SUBJECT GROUPS TAKEN DURING THEIR FIRST TWO YEARS BY 200 STUDENTS ENTERING THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS OF THE UNIVERSITY OF MINNESOTA AND PERCENTAGES FOR STUDENTS ENROLLED IN PUBLIC JUNIOR COLLEGES

SUBJECT OR SUBJECT GROUP	AVERAGE NUMBER OF SEMESTER HOURS* TAKEN IN UNIVERSITY	PER CENT TAKEN IN UNIVERSITY	PER CENT TAKEN IN 12 PUBLIC JUNIOR COLLEGES	PER CENT TAKEN IN 5 PRIVATE NORTHERN JUNIOR COLLEGES
English	12.4	21.2	24.7	18.7
Public speaking	1.3	2.1	1.3	2.3
Ancient language	0.9	1.5	0.2	1.3
Modern foreign language	11.5	19.8	19.7	15.9
Foreign language	12.4	21.3	19.9	17.2
Mathematics	1.7	3.1	10.7	3.1
Science	7.6	13.1	19.4	14.2
Social subjects	15.0	25.7	12.5	12.2
Philosophy, psychology, etc.	4.2	7.3	5.5	5.3
Fine arts	1.2	2.0	0.8	9.0
Occupational	2.4	4.2	5.3	18.0
TOTALS	58.2	100.0	100.1	100.0

* Computed from quarter hours.

Further inquiry into the feasibility of doing two years of college work.— Another approach to passing judgment on the practicability of providing the first two years of college work in junior colleges is afforded by the computation of the average amount of work taken in each of the subjects or subject groups by a group of students who have attended two years in a standard college, the percentage distribution in which this results, and the percentage distribution of work taken by students in junior colleges. The outcomes of such computations are to be found in Table XIX, which contains in the first column of figures the average number of semester hours (computed from quarter hours) taken by the 200 students of the College of Science, Literature, and the Arts of the University of Minnesota concerned in Table XVII; in the second, the percentage distribution computed from these data; and similar percentage distributions for junior college students.

The proportions for junior colleges are based on registrations in all courses during one semester and, because the proportion of second year students is relatively small in most of these units, there is a measure of invalidity in such a comparison. There is enough of merit, nevertheless, to warrant at least brief study of the figures resulting.

For the 200 students considered the average total semester hours of work taken not including physical education and military training is 58.2. This is slightly below the anticipated norm of 60, probably because some work was repeated on account of failure and partly for other reasons. The larger amounts are in English (mostly "freshman rhetoric"), modern foreign language, and the social subjects. Science is the only remaining group coming in for more than five hours of recognition, and the amount in this field is approximately half that in the social studies. It does not appear from a comparison of these figures in the first column with corresponding measures in Table VI that the junior colleges with average or more than average offerings should experience great difficulty in giving as much or more in each field represented.

The remaining columns of the table show that junior college students are receiving about the same percentage distribution of work as are these 200 students. The more notable exceptions are mathematics, science, and the social subjects. In the first two of these the students in public junior colleges exceed the students in the University of Minnesota, in the third the University group secures larger amounts. The reader will be able to note readily any differences for private junior colleges.

There is little in this analysis which leads one to suspect the inadequacy of the junior college, unless it is the meager recognition of the social studies. It should be admitted, however, that the comparison has its limitations because it does not take into full account the range of work in each subject group represented in these amounts and percentages.

Meeting the prescriptions of the colleges of liberal arts.—A final aspect of the problem of giving in junior colleges the first two years of college work (to be touched upon here) is the possibility of meeting the prescriptions of colleges of liberal arts as administered during freshman and sophomore years. These prescriptions have been canvassed for the 114 separate colleges and the colleges of liberal arts in the 20 universities represented in earlier portions of the current chapter and for the two degrees for which prescriptions are most frequently indicated, the bachelor of arts and bachelor of science. The former is represented in all institutions included in the study, the latter in 62 separate colleges and in 16 of the 20 colleges of liberal arts in universities.

TABLE XX

AVERAGE NUMBER OF SEMESTER HOURS PRESCRIBED IN CERTAIN FIELDS FOR THE BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES AND PERCENTAGES OF COLLEGES AND UNIVERSITIES MAKING THE PRESCRIPTIONS

SUBJECT OR SUBJECT GROUP	IN SEPARATE COLLEGES				IN LIBERAL ARTS COLLEGES OF UNIVERSITIES			
	Bachelor of Arts (114 Institutions)		Bachelor of Science (62 Institutions)		Bachelor of Arts (20 Institutions)		Bachelor of Science (16 Institutions)	
	Average semester hours prescribed	Per cent requiring	Average semester hours prescribed	Per cent requiring	Average semester hours prescribed	Per cent requiring	Average semester hours prescribed	Per cent requiring
English	9.4	96.5	8.8	96.8	6.2	80.0	5.5	83.3
Foreign language	11.9	84.2	9.1	80.6	6.2	60.0	7.0	66.7
Mathematics	3.4	49.1	5.9	77.4	1.3	20.0	3.3	50.0
Science	5.3	57.9	9.4	64.5	3.1	45.0	7.7	66.7
Mathematics or science	1.0	11.4	0.9	9.7	0.9	10.0	1.0	16.7
Social subjects	3.7	54.4	3.1	48.4	3.6	35.0	1.0	16.7
Philosophy, psychology, etc.	3.1	55.3	3.4	54.8	0.8	15.0	2.5	15.0
Physical education	3.0	74.6	3.2	77.4	3.0*	75.0	3.0*	83.3
Military training	....	....	....	....	2.2*	45.0	1.7*	33.0
TOTAL	40.8	....	43.8	....	27.3	....	32.7	....

* Physical education and military training are not both prescribed for all students. This fact would reduce somewhat the average totals at the foot of these columns.

The results of the canvass are to be found in Table XX, which presents the average number of semester hours prescribed in each field and in all subjects, and the percentages of institutions making the prescriptions. Except for the subject group designated "mathematics or science," this table does not indicate requirements where a wide option among two or more subject groups as they are here listed is allowed. The average amounts in the first column of figures show, for the bachelor of arts degree, the three largest arranged in the following order: foreign language, English, and science. In all other groups the average prescription is less than four semester hours. It may be seen in the third column of figures that the essential differences, where the bachelor of science degree is concerned, are less foreign language and more mathematics and science. The percentages of colleges prescribing (see second and fourth columns of figures) correlate roughly with the amounts as shown. The averages of the total prescriptions are seen to cover approximately two thirds of the sixty semester hours of all work—sometimes slightly more—which the student is presumed to do during two years in college.

The data for colleges of liberal arts in universities show almost universally lower average amounts of prescriptions and percentages of institutions prescribing than those for separate colleges. This interpretation applies to both degrees. The items of approximate equality are physical education for the two degrees, and social subjects for the bachelor of arts, and mathematics or science—which concerns a small proportion of schools—for both degrees. The averages of totals are also much lower, being considerably less than a half of two years' work in the case of the bachelor of arts, and slightly more than half for the bachelor of science. It must be clear that, speaking in terms of averages, junior college graduates would experience less difficulty in qualifying on the prescriptions in liberal arts units of universities than on those in separate colleges.

Because the table just examined, since it represents colleges of the country as a whole, conceals certain differences among the sections, it is desirable to illustrate this divergence. This is accomplished in Table XXI, which shows facts concerning prescriptions in the separate colleges of New England and of the North Central states. These groups have been selected because they represent almost as wide variation in practice as is to be found in five sections into which the colleges of the country were divided.

The colleges of the North Central states are seen to prescribe work in foreign language, mathematics, and mathematics or science in lesser amounts and less frequently than do those of New England. On the other hand they tend to prescribe larger amounts and more frequently in English, the social studies, and in philosophy, psychology, etc. In total amounts prescribed these two groups differ to about the same degree as do all separate colleges

and liberal arts units of universities as already shown. In addition to the differences shown, there are divergences in particular groups of foreign languages, as 81.3 per cent of the New England group prescribe ancient language, whereas only 6.7 per cent of the North Central group make such a prescription. Again, 43.8 per cent of the New England group prescribe modern foreign language, while only 10 per cent of the North Central group administer an absolute prescription of this nature.

Prescriptions in the Western group, not presented in the table, do not differ widely from those in the North Central group. Prescriptions for the Middle Atlantic and Southern groups differ from those in New England primarily in covering a larger proportion of the total of sixty hours and insisting upon more English, mathematics, science, social studies, and philosophy, psychology, etc.

TABLE XXI

AVERAGE NUMBERS OF SEMESTER HOURS PRESCRIBED IN CERTAIN FIELDS FOR THE BACHELOR OF ARTS DEGREE AND PERCENTAGES OF COLLEGES MAKING THE PRESCRIPTIONS—NEW ENGLAND AND NORTH CENTRAL STATES COMPARED

SUBJECT OR SUBJECT GROUP	NEW ENGLAND (16 INSTITUTIONS)		NORTH CENTRAL STATES (30 INSTITUTIONS)	
	Average Semester Hours Prescribed	Per Cent Requiring	Average Semester Hours Prescribed	Per Cent Requiring
English	6.6	81.3	8.3	100.0
Foreign language	16.4	93.8	7.3	76.7
Mathematics	2.8	43.8	1.2	20.0
Science	3.5	50.0	3.2	46.7
Mathematics or science	2.6	25.0	1.0	13.3
Social studies	1.9	31.3	3.2	50.0
Philosophy, psychology, etc.	1.3	18.8	2.5	50.0
Physical education	4.1	81.3	3.2	80.0
TOTALS	39.2	...	29.9	...

Although it is unsafe to draw sweeping conclusions from these average prescriptions and the percentages of colleges administering them, they lend support to belief in the feasibility of providing in junior colleges the first two years of college work. They do this, first because they indicate a *predominant tendency to require a spread of the first two years of work over a considerable range of elementary academic materials;* and second, because they show that the *average amounts prescribed are all, with the exception of physical education, well below the average junior college offerings as shown in Table XVI,* and well within the scope of offerings shown in the

tabular description provided in the first half of this chapter. While not alone affording grounds for complete assurance, they add something of corroboration to the conclusion of feasibility previously arrived at.

IV. Recapitulation, with a Suggested Minimal Liberal Arts Offering

Epitome.—The chief significances of the materials thus far presented in this chapter are as follows:

a. The curricular offerings listed in the catalogues of junior colleges, public and private, even in the present stage of development of the new unit, cover a wide range of materials. Most of these are of an academic character, but there is evidence that the junior college authorities see a necessity of extending into the realm of the occupational.

b. A check of the courses actually going forward against those listed in the catalogues results in some reduction in the total amounts of work as reported. The shrinkage, either as a whole or as to particular courses, is not sufficient to affect vitally conclusions drawn.

c. Comparison of the work offered to underclassmen in separate colleges and in liberal arts units of universities with that available in junior colleges is somewhat unfavorable to the latter as concerns the numbers of semester hours in each main academic field and in the total offering. The offering in separate colleges exceeds that in junior colleges by approximately fifty per cent, while that of liberal arts units in universities is more than double that of the unit under scrutiny.

d. A study of the work actually taken by 200 unselected students during their first two years in the liberal arts college of a state university in the Middle West shows, however, that, if courses taken by 2 per cent or less had not been made available, the total range of work taken would have been reduced by half, i.e., from 713.7 to 353.4 semester hours. By so doing, only 4.8 per cent of a total of 11,663.7 semester hours of work taken by these students during their first two years would be involved. If courses taken by 5 per cent or less had not been made available, the total range of work taken would have been reduced by almost two thirds, i.e., to 260.7 semester hours. Again, by so doing, only 12.0 per cent of the total amount of work taken would have been involved. The latter range of semester hours remaining, i.e., 260.7, is not far from the average total amount of work available in public junior colleges and leads to the conclusion that something like a total of 225 to 250 semester hours of academic work, properly distributed, will meet satisfactorily the needs of the function of the junior college here under consideration, the giving of the first two years of work in colleges of liberal arts.

e. Other materials such as a comparison of the range of courses offered in particular fields in junior colleges and in separate colleges, the average

amounts of work prescribed in each field toward the two most common degrees, etc., lend further support to the conclusion of feasibility in strong junior colleges.

The appropriate offering for the purpose in question.—It remains to afford this conclusion of feasibility the additional corroboration of suggesting within the scope of approximately 225 to 250 semester hours a junior college offering likely to meet the requirements of the situation. Because the analysis of work actually taken as here reported concerns an institution in the Middle West, the work suggested is that which would be more adaptable to the needs of the same section, although it will be seen to be adaptable with minor modifications to most other sections. The proposals are based on careful consideration of offerings and prescriptions in the colleges of liberal arts concerned in earlier portions of this chapter. The courses listed are for the most part those appearing with greatest frequency in the offerings of separate colleges, more especially institutions in the Middle West. The amounts of credit assigned were likewise determined in most instances by the typical numbers of semester hours assigned to them in the college offerings. The list is not presented to be defended against other proposals, but as one likely to meet the requirements of the purpose being considered for a group of students representing a legitimate range of liberal arts needs and interests. The usual offering in physical training should be added.

The estimate of total range of credit involved in offering the courses listed is seen to be 225 semester hours. Some may see portions of the offering which might be dispensed with in particular situations. Among these might be one of the courses in literature listed under English, the most advanced course in French, as much as five to ten semester hours of the offerings in science, two or three courses in history, and one in the philosophy group. Such a reduction would bring the total down to something like 200 semester hours or slightly less, but each step in curtailment might affect disadvantageously the interests of a group of students whose interests command recognition. The desirable situation implies avoiding an offering that is in essence a fully prescribed curriculum; it demands one sufficiently elastic to permit preparation for a variety of arrangements of the upper-class curriculum of the liberal arts college.

Some may feel that the offering should include other courses found available with considerable frequency for freshmen and sophomores in standard colleges, but not listed here and that these should be either added to those suggested or in certain instances substituted for some of those named. Among such courses are: under English and public speaking: the novel, the short story, nineteenth-century poetry, and argumentation and debate; under foreign language: French or German conversation, Spanish; under

science: general biology, plant physiology, or morphology, elementary physics, astronomy, and geology; and in social subjects: money and banking, municipal government, etc. It would not be difficult to recommend 50 to 75 more semester hours of work drawn from this supplementary list which might fit the needs of no negligible number of students contemplating continuation in colleges of liberal arts.

	Semester Hours	
English and Public Speaking		
Freshman rhetoric	6	
Advanced composition	4	
Survey course in English literature	4	
American literature	4	
Shakespeare	6	
General public speaking	2	
Extempore speaking	2	
	—	28
Foreign Language		
Elementary French	8	
Second year French (intermediate)	8	
Advanced French	6	
Survey of French literature	4	
French conversation	4	
Elementary German	8	
Second year German (intermediate)	8	
	—	46
Mathematics		
Higher algebra	3	
Solid geometry	2	
Trigonometry	3	
College algebra	3	
Analytic geometry	4	
Differential and integral calculus	6	
	—	21
Science		
General inorganic chemistry	8	
Qualitative chemistry	4	
Quantitative chemistry	4	
Organic chemistry	8	
General botany	8	
General zoology	8	
Physiology	4	
Heredity, evolution, genetics	3	
Vertebrate zoology	6	
General physics	10	
	—	53

	Semester Hours	
Social Subjects		
Modern Europe	6	
Medieval Europe	6	
American history	6	
English history	6	
Greek history	3	
Roman history	3	
Economic history	3	
Principles of economics	6	
American government and politics	5	
Comparative government	4	
Introduction to sociology	6	
	—	54
Philosophy and Psychology		
Introduction to philosophy	3	
Ethics	3	
Logic	3	
General psychology	4	
	—	13
Total		225

The offering as listed includes in foreign language, four college years of French and two of German. Most colleges add to this offering, work in Latin and Spanish. Courses in the former have been omitted because relatively few students in the typical mid-western college are at present enrolled in classes in Latin and because in junior colleges where it is offered classes infrequently materialize. Spanish is omitted because it is felt that work in two modern foreign languages will suffice. If Spanish is substituted for German, the extent of the offering in foreign language might need to be increased, because students now often enter college with two high school years of the former. The disappearance of German from high school programs obviates the necessity of offering more than two years of that language in the junior college. Because college freshmen in the Middle West seldom offer more than two years of French for entrance, in some situations it would be gratuitous to offer more than the three college years of that language.

The financial implications as influenced by the size of the enrolment necessary to justify the minimum desirable liberal arts offering suggested are given some consideration in Chapter XXXIX.

Related problems not dealt with in the current chapter.—It may assist in keeping issues clear to state that the offering proposed does not contemplate the performance of preprofessional functions, which are to receive consideration in the next chapter. Although many of the materials are to

be found listed in preprofessional curricula, the intent here has been to select offerings pertinent primarily to liberal arts curricula.

There is no assumption, moreover, that effectiveness of presentation of the work offered in junior colleges has been comprehended by this portion of the investigation. This is an important related consideration left for treatment in Chapters XII, XIII, and XIV, the concluding chapters of Part II.

CHAPTER IV

THE JUNIOR COLLEGE AND PREPROFESSIONAL REQUIREMENTS

I. The Problem and the Method of Studying It

The problem.—The second phase of the feasibility of giving, in the junior college, two years of work acceptable to colleges and universities is one of major importance. It is also a much more complex problem than that of whether the junior college can give satisfactorily the first two years of general college work for those contemplating continuation of a liberal arts curriculum. The question here is, can the junior college offer and give effectively the first two years of work in training toward the professions, both in preprofessional curricula, e.g., pre-legal and pre-medical, and in the freshman and sophomore years of professional curricula open to the student upon completion of his high school work, e.g., agriculture or engineering?

With the aim of providing a basis for answering this question with something like finality an extended study has been made of curricula of the sort referred to in a wide variety of professional lines—in point of fact, eighteen. As may be seen from the accompanying tables, there have been included with few exceptions all lines recognized with considerable frequency in the professional schools of larger universities of the country. The occupations excluded are for the most part those not often represented in higher institutions or those fairly well represented by the curricula for some other profession. A few of those included concern a relatively small proportion of any possible student body in junior colleges as a whole.

The number and distribution of curricula included.—A total of 230 curricula have been included in the tabulations from which this portion of the study is drawn. Their distribution may be seen by noting the numbers given in parentheses immediately following the names of the occupations in the tables. These numbers in a few instances are small, owing either to the small proportions of the catalogues used in the study which reported the work prescribed in detail or by years, or to the relatively small numbers of schools giving training for the occupation. In some cases, both types of influence tended to reduce the number of curricula considered. There are, however, enough cases for every line at least to illustrate the problem of providing the necessary work in the junior college.

The institutions.—The curricula used were drawn from standard institutions in all sections of the country. Most of these schools are universities on private and public foundations, but for lines like agriculture and home economics it was necessary to draw upon larger state agricultural and

mechanical colleges, some of which in range and character of work offered will compare favorably with some institutions designated as universities.

Further specification of the professional and preprofessional curricula included.—Although schools of *law* vary in the amount of preprofessional work required for admission, the trend seems to be in the direction of two years of pre-legal work. On this account it is these pre-legal curricula, two years in length, which have been included in the study, rather than the first two years of distinctly legal curricula of other types. The Council on Medical Education of the American Medical Association and the Association of American Medical Schools have been elevating standards in their profession to such an extent that there is great uniformity in the application of a requirement for admission to schools of *medicine* of at least two years of pre-medical work. These two-year curricula constitute the majority of those included in this study, but in a few instances the first two years of work in three-year pre-medical curricula have been introduced into the tabulations. The study describes two situations in the field of *dentistry*. The first is one in which are tabulated the first two years of work in extended curricula for whose successful pursuit the candidate receives two degrees, a Bachelor's degree and the degree in his specialty. This has been done because dental schools are taking steps in the direction of subsequently insisting upon a two-year standard of admission for all students. Because it does not yet apply to large proportions of the enrolment in schools of dentistry, the *one-year* pre-dental curricula have also been canvassed. The first year of the professional curricula in dentistry has not been included with the pre-dental year because the training is so obviously special as to put it out of consideration as a feasible offering. For *nursing* essentially the same procedure has been followed as for the former of the two situations in dentistry: the first two years of combined curricula only have been included. Thus, here again, we are studying what are essentially pre-nursing curricula. The writer is not unaware that certain junior colleges, e.g., those at Grand Rapids, Michigan, and Kansas City, Missouri, are offering the classroom content of nursing curricula, but at this point we are giving consideration only to training for professions in the sense of occupations requiring for entrance four or more years of training subsequent to high school graduation, and not to semiprofessions, that is, occupations the training for which is given during a shorter period of one, two, or three years following completion of the high school course. In *pharmacy*, the first two years of three-year (two cases) and four-year (six cases) curricula have been tabulated. For *education, commerce* and *journalism*, what have been designated as preprofessional curricula, if any, have been included; otherwise the first two years of four-year curricula have been used. For all remaining lines, the prescriptions in the first two years of full curricula

usually four years in length were introduced into the tabulations. For *agriculture* and *home economics,* wherever a choice of specialty was open to the student, the first two years of the "general curriculum" were used in the tabulation.

Distinction between general and special subjects and courses.—To facilitate consideration of the feasibility of offering in junior colleges the work listed, it was found desirable to divide it into two large groups which have been designated as *general* and *special,* marking out roughly at least a distinction between the materials of general or specialized education. Under the former class have been grouped most work in English; foreign language; mathematics through the calculus; most courses in the social studies, such as those in history, political science, and sociology; first courses in economics; philosophy; psychology; and all courses in "pure" science. In the second class have been placed all such materials in these fields as bore evidence of being for special groups or were clearly "applied" courses such as "business English," mathematics of investment, agricultural chemistry, household physics, economic zoology, educational psychology, etc. Here also were placed all courses in commerce in advance of the first course in economics. Far the larger proportion, however, of this class was made up of work in such special lines as pharmacy, education, agriculture, home economics, engineering, and the like.

There are, of course, grounds for taking exception to some of the classifications in the distinction made, as for instance, in placing the calculus with the general in education, while placing an elementary course in library technique intended for all students under the head of special courses. Such objection is, however, beside the point in a classification made primarily for the sake of facilitating consideration of the problem as already stated.

II. Prescriptions in General Subjects and Subject Groups[1]

English.—The results of analysis of the general content of the first two years of professional and preprofessional curricula are presented in Tables XXII and XXIII. The former shows for each profession the numbers of institutions making prescriptions in each of the several subjects and subject groups and the average and modal amounts in semester hours[2] prescribed. It presents in the last column the number of institutions making any prescriptions in the general fields, and the total average and modal amounts of such work. For instance, beginning in the upper left-hand corner of the table, we find that five of the six pre-legal curricula set up a requirement in English averaging 9.3 semester hours, but there is no modal requirement; 25 of the 28 pre-medical curricula set up such a requirement, averaging 5.8

[1] Required physical and military training are not included in this study.

[2] Wherever other units of credit were used they were reduced to the semester hour basis.

semester hours, with the mode at 6 hours, etc. Glancing down this column one finds that a requirement in English is well-nigh universal in professional and preprofessional curricula. It ranges higher in amount for Dentistry A (combination curriculum), journalism, and home economics than for other groups, but is a fairly constant prescription.

The second table, which presents the frequency of appearance of all single course prescriptions found three or more times in all the 230 curricula, indicates what tend to be the courses that make up the amounts appearing in Table XXII. Thus, in the field of English just referred to for most professions the prescription is the course known as freshman composition. In some instances (see the second row of figures) it is a course which combines composition and literature. Occasionally, but not often, another course is added to the prescription, such as the history of English literature (or survey course), any "English literature" (see Item 6), or public speaking.

Foreign language.—Making a similar examination of those portions of these two tables presenting the data concerning foreign language, we find that there are fairly constant requirements in this field in curricula for law, medicine, dentistry (combination curriculum), education, commerce, journalism, chemistry, and architecture. It is infrequent for the requirement to extend beyond a single year, i.e., 6 to 10 hours. Table XXIII shows no strong tendency to specify the language, except to indicate that it shall be modern or French or German. The curricula in chemical engineering and chemistry are exceptions in prescribing German.

Mathematics.—Both tables show that almost the only professions other than the engineering group making prescriptions in mathematics are commerce, agriculture, and forestry, and these do not ask for the calculus. Nearly all the engineering group specify up to 16 to 20 hours, asking for everything from college algebra through the calculus. Manifestly, if the junior college plans to give the first two years of courses in engineering, they must offer such an amount of work in this field.

Social studies.—Law, nursing, education, commerce, journalism, and home economics tend to make prescriptions in this field. The only profession asking for large amounts is commerce. When specified these courses tend to be as follows: in law, American or English history, American government and economics; in nursing, economics or sociology; in education, history or sociology; in commerce, economic history, economics, and American government; in journalism, American or English history and economics; and in home economics, a course in history or one in economics.

Philosophy and psychology.—Law, education, commerce, and home economics each occasionally make prescription in this field. Usually the requirement is for a course in general psychology.

Biology.—Medicine, dentistry, nursing, pharmacy, agriculture, forestry, and home economics call for courses in this field. Of the elementary courses, medicine expresses a preference for zoology, although often announcing acceptance of general biology. Dentistry and nursing are in agreement with medicine here. Pharmacy and forestry more often prescribe botany. Home economics sometimes, and agriculture often, insist upon recognition of both fields. Of additional courses, bacteriology is prescribed by nursing, pharmacy, home economics, and agriculture; physiology, by the first three of these four groups. To meet the needs of all groups in this field satisfactorily, there should be courses in botany and zoology (or general biology), physiology, and bacteriology.

Chemistry.—This subject appears to be essential to medicine, dentistry, nursing, pharmacy, agriculture, forestry, home economics, and all engineering lines excluding architecture. To meet the needs of all the groups the junior college must make the following offerings: general inorganic (or general inorganic and qualitative combined), qualitative, quantitative, and organic. If junior colleges as a group failed to offer organic, they would tend to restrict enrolment, except during the first year, of those planning to continue in medicine, dentistry, pharmacy, agriculture, home economics, and chemistry. If they failed to offer quantitative, enrolment of those interested in pharmacy, agriculture, chemical engineering, chemistry and mining would be discouraged. To fail to offer qualitative would affect in this way almost all groups named as requiring chemistry.

Geology, etc.—Geology seems to be essential to three groups only, agriculture, civil and mining engineering—much more so to the group last named than to the others. Mineralogy is prescribed at all frequently only in forestry, chemical engineering, and mining. If no work in these subjects were offered, the discouragement would therefore apply particularly to the prospective student in mining.

Physics.—The demand for this subject is mostly in the pre-medical, predental, forestry, and engineering groups, inclusive of architecture. The requirement is almost always for a general course of 6 to 12 hours.

All natural science.—The only professional groups not laying stress on natural science are law, education, commerce, and journalism. To appeal to the remaining groups requires of the junior college a generous offering in the sciences.

All general requirements.—A glance down the last column in Table XXII assists one in arriving at a judgment concerning the feasibility of caring for each of the groups with a junior college offering made up entirely of the general materials which have so far been considered. (1) The "all general" here referred to should be understood to include all materials so far dealt with in this portion of the study and *also all elective portions* of curricula

where they may be selected from non-special fields. Assuming that the average total requirement is at 60 semester hours or slightly above, it may be seen that the following groups could meet all or essentially all of their requirements of the first two years, professional or preprofessional, in junior colleges with a general offering of the subjects and courses already specified: law, medicine, dentistry (combination curriculum), nursing, education, journalism, and chemistry. The requirement of the one-year predental course could also be fully met. (2) Only two thirds to three fourths of prescriptions in the following groups could be met: commerce, agriculture, home economics, and all engineering groups excepting chemical engineering and architecture. (3) A somewhat larger proportion could be met in chemical engineering. (4) In pharmacy, forestry, and architecture only about half of the requirements could be met. If no special work could be offered in junior colleges, students interested in the lines represented in (2), (3), and (4) would need to transfer to the professional school or other higher institution at the end of the first year.

The general work offered by junior colleges.—A significant test of whether the junior colleges *can* make the offerings in the general fields here shown to be necessary in order to meet the needs of these special groups during their first two years beyond the high school is whether they *are* doing so at the present time. Generally speaking, junior colleges have been conservative in extending the range of work offered, being guided in the listing of any new course very largely by the willingness of higher institutions to grant credit for it. Judgment can therefore readily be passed on the criterion mentioned by reference to the tabular study of the junior college offering in Chapter III. The fairer comparison is with the work offered in public junior colleges, since that group of institutions is to a much larger extent than the private junior colleges coeducational. The private institutions used in the study to which reference is being made were for the most part schools for women in which on this account relatively little effort would be made to meet the needs of the most of the professions represented in the present study, which to date have recruited their members almost exclusively from men. Comparison of the average amounts of work in each of the general fields listed in Table XXII with the corresponding averages in Table XVI shows the average public junior college to be well prepared from the standpoint of amount of work in each of the major general fields. Likewise, a comparison of the list of courses in Table XXIII with those for public junior colleges in Tables VII-XII, and elsewhere on pp. 33-37, shows a strikingly satisfactory correspondence of proportionate representation of courses. A careful examination will show some discrepancies in the junior college offerings, such as an absence of biochemistry, a

too meager recurrence of entomology or physiology, etc. But, as a whole, in view of the youth of the junior college movement, the results of such a comparison are favorable to it.

III. Prescriptions in Special Subjects and Subject Groups

Commerce.—It appears in Tables XXIV and XXV that the only curricula requiring much (beyond the first course in economics which has been listed as a part of general training) in this special field are those in commerce or business administration itself (see Profession 8 in these tables). The average and modal total numbers of semester hours of this special work prescribed in these curricula are 12.6 and 16, respectively. Accounting and commercial geography are the courses more commonly called for, with others in money and banking, statistics, the theory of investments, and business English less frequently insisted upon.

Pharmacy.—Similarly the work in pharmacy is demanded almost exclusively in the curricula preparing for participation in the occupation bearing that name, although there is one instance in the pre-dental group of a requirement in this field. Some of the particular courses required are to be found listed in Table XXV.

The remarkably large average and modal total numbers of hours of work to be found in Table XXIV deserve some special comment. It has already been indicated that in this study we have included the first two years of three-year (2 cases) and four-year (6 cases) curricula in pharmacy. Those conversant with curricula in this field will know that in these four-year and sometimes even in the three-year curricula the professional work is often placed in the first two years and the general work for the most part in the upper years. This reversal of the usual procedure in training for the professions is doubtless due to the desire of those contemplating entrance to this occupation to achieve their objective in a short period of two years and their unwillingness to defer entrance to occupational activity until they have completed a four-year curriculum. Some of them, however, do subsequently aspire to a degree and for them the longer curricula have been provided. This situation is probably not what those in charge of schools of pharmacy prefer. It is thus conceivable that the authorities in schools of pharmacy to which this description applies might be ready to accept the general training if taken in junior colleges *before* the student enters upon the more strictly special work in the curricula in pharmacy.

Nursing.—The prescription of work that has been grouped in this field is so infrequent, even in preprofessional curricula bearing the same name, that the junior college would seldom indeed be called upon to give courses in it.

Education.—The only groups prescribing work in this field are the teaching profession and, for the reason that graduates of curricula in the

field often enter teaching work, home economics. The only courses prescribed with anything like frequency are methods of study and educational psychology. The former of these is not strictly a special course, being required for the purpose of improving the student's study technique, rather than as professional training for teaching. The requirement is so uncommon that in very few instances, if no education were offered or taken in the junior college program, would the student be embarrassed in articulating what he has had in the first two years with the advanced work of his choice in standard higher institutions.

Library science.—Such infrequent requirements in this field as are made are not for special training for librarian, but for general training in library technique essential to all students. When required, this work is small in amount, and no junior college with adequate library facilities and a properly trained librarian should find the offering of the course listed in Table XXV impossible.

Journalism.—Three of the four curricula in journalism whose first two years were canvassed for this study prescribe work in the specialty concerned. Here again the amount of special work tends to be so small as to predict little or no embarrassment to the graduate of the junior college, if he seeks admission to the third year of a higher institution and plans to continue in journalism.

Agriculture, forestry, home economics.—Each of these special subjects, like most of those so far dealt with, has a content peculiar to the occupational groups it represents. Agriculture, as may be seen in Tables XXIV and XXV, constitutes a large portion—on the average almost a year's work, in fact—of the first two years of professional curricula bearing this special title, but appears occasionally in forestry curricula as a course in soils and in curricula in home economics under two course names, gardening and agricultural chemistry. Courses in forestry appear only in curricula under this name, while courses in home economics are required, with the exception of an occasional prescription of work in dietetics for nursing, only in curricula bearing the name home economics. In these cases the average and modal amounts are 17.7 and 17 hours, respectively, i.e., the equivalent of a strong semester's load for the student. The courses which appear more commonly in these three fields are listed in Table XXV. For agriculture they range widely in character and content, with agricultural chemistry, field or farm crops, horticulture, soils, dairy husbandry, and poultry as the most common, others appearing less frequently. Most of the courses in agriculture are elementary or introductory courses in the special line within the field. The range of courses in forestry and home economics is not as wide, and the courses here also are of an elementary or introductory sort.

Graphic arts.—The requirements in the field designated in this study as graphic arts lie most heavily, as may be seen in Table XXIV upon home economics, forestry, and the engineering group, including chemistry and architecture. For forestry, home economics, and chemistry the prescription is somewhat less than for the remaining groups referred to. The kinds of materials emphasized are far from identical in all these groups (see Table XXV). For home economics the courses are in design; for the engineering groups they are descriptive geometry, mechanical, machine, and engineering drawing, and machine design; for architecture the courses serve the needs of that occupation by emphasizing special types of drawing and design.

Shop and related work.—Except for an occasional requirement elsewhere this work is prescribed exclusively in the engineering group. It is seldom prescribed in the curriculum in chemistry. Table XXV shows that the lines of shop work and their combinations run through some variety. The total frequency of each type of shop work whether appearing in courses singly or in combinations is as follows:

Wood-working	40
Forging	40
Foundry	32
Machine shop	23
Pattern-making	20
Metal-working	9
"Shop"	7
Auto shop	4
Tool-making	3
Pipe-fitting	2
Joinery	1

It is evident that if a junior college desires to attempt the work of the first two years of most engineering curricula, it will need to provide instruction in the first five lines named above. This does not seem impossible, since many high schools are doing as much or more at the present time.

Engineering, etc.—In this field there are requirements of considerable proportions in Groups 11, 13, 14, 15, 16, 18, and 19. For forestry this special requirement is usually surveying, while for the engineering groups it is usually surveying and mechanics, with a course in materials of construction appearing with slightly greater frequency than the remaining courses. For architecture, the additional special work listed is in more applied drawing and design and in the history of architecture.

All special prescriptions.—It is hardly necessary to do more at this point than to refer to the last column in Table XXIV for corroboration of what was said above under the head of "all general requirements": the figures in this table show that if nothing but general work is given in junior colleges,

only the law, medicine, dentistry (combination curriculum), one-year predentistry, nursing, education, journalism, and chemistry groups would be on the whole fully served thereby. To care properly for the interests of students in the remaining groups, efforts would need to be made to offer the special content necessary.

The special work offered by junior colleges.—Before summarizing on the problem of the feasibility of offering in junior colleges the first two years of work in professional and preprofessional curricula it is pertinent to refer again to the offering in public junior colleges—in this instance to that portion of the offering which is to be found in the special fields we have been considering (see Table XV). We need in this connection to scrutinize the situation only as it pertains to those professions already indicated as having considerable proportions of special work during the first two college years, as our concern at this point is as to the feasibility of providing in the junior college the special work in these curricula only. Feasibility touching other curricula is not open to question here.

Little work in *pharmacy* is offered in junior colleges (see p. 39). For the present, schools of pharmacy now in existence seem to have no difficulty in caring for all those seeking to enter this occupation and it does not appear necessary or desirable, therefore, for the junior college, except perhaps in an occasional local situation, to endeavor in the immediate future to give the amount of special training found to be prescribed in the first two years of three- and four-year curricula in this field. This does preclude giving to such students in junior colleges as seek degrees in pharmacy one, and sometimes two, years of general work in degree curricula, the special work to be taken subsequently elsewhere, although, owing to the peculiar organization of many such curricula in pharmacy, this will be placing the work of a general sort at the end opposite to that in which it is now to be found. Should pharmacy evolve to the professional level (this level being determined by the requirement for entrance of at least four years of training beyond high school graduation), as leaders in the field are disposed to believe it will, the junior college will be in a position to serve it preprofessionally just as it now can serve law and medicine. Should this genuinely professional goal prove unattainable and preparation for pharmacy remain on its present typically semiprofessional level (involving only two years of training beyond the high school), the full advent of junior college reorganization will allocate curricula in pharmacy to the junior college units. In the latter circumstance, students in this line are such a relatively small proportion of all those enrolled in higher institutions that it will be necessary to establish the work in only a few junior college centers in any state. Perhaps even a single center will suffice. Either eventuation can be served by

the junior college, and it seems probable that rapid junior college reorganization will even hasten the clarification of the issues tending to confuse the problem of training for this line of work.

Judging from the average amount of work and the distribution of courses in *commerce* (Tables XXIV and XXV) compared with the junior college offering shown in Tables VI and XV, there can be little question of the practicability of providing fully for the groups of students who plan to continue work in university schools of commerce upon completion of their junior college work. The absence of the course in statistics in the junior college offering is occasion for small concern. The extent of the junior college offering in this field presages the ability to give this course if insisted upon by schools of commerce.

The junior college offerings in *agriculture* (see same tables) do not compare favorably with the special requirements in professional curricula in this field, but this is in part owing to the fact that public junior colleges are usually to be found in cities of good size where there is relatively little demand for special work of this kind. Elsewhere (Table CCXXI, Chapter XXXIX) the proportion of students likely to be concerned is shown to be considerable and any complete plan of junior college reorganization cannot lose sight of them. There is no reason to believe that the work concerned cannot be given in junior college units especially equipped and manned for it. In any state system of junior colleges the needs of this group could be conserved by establishing this special line of work in association with strong high schools serving territory with interests of a rural and agricultural character. As shown in Table XXV, among the courses it would be desirable to offer in order to give the first two years of curricula in this line are farm crops, horticulture, soils, dairy husbandry, agricultural chemistry, poultry, livestock, and types and breeds of farm animals.

No junior college offers work in *forestry*. The figures for this group in Table CCXXI in Chapter XXXIX make clear that an almost negligible proportion of students would be inconvenienced by the failure of junior colleges generally to recognize their needs. As it is desirable in certain states to provide training for this type of activity, that portion specifically occupational could be offered in one or two junior college centers contiguous to the region most needing the service. Pending complete reorganization of secondary and higher education along junior college lines, those students who plan to enter forestry would find it necessary to transfer from the junior college at the end of the first year.

Public junior colleges would need practically to double their offerings in *home economics* to take care adequately of the first two years of four-year curricula in this field. The offerings in private junior colleges are almost adequate in extent and character (compare Tables XXIV and XXV with Tables VI and XV) for the purpose under consideration. As junior

colleges come to extend the materials of instruction for those young women who conclude their education in the junior college period, they will open up more work in this field and will at the same time bring completely within the realm of feasibility the giving of the first two years of curricula in home economics.

Judging from a comparison of Tables XXIV and XXV with Tables VI and XV, respectively, junior college courses, though a little short, approximate the special requirements in most of the *engineering* groups. While the classifications in the two pairs of tables are not strictly comparable, the amounts and specific character of prescriptions as shown under graphic arts, shop, and engineering in the latter pair may be judged to be only to a degree in excess of the work available even in these early stages of the development of the new unit. The apparent partial lacks in the latter as they concern most of the engineering groups are foundry practice in the list of shop courses, and in mechanics and materials of construction in the list of engineering courses. The facts that these are given in some, even if a small number of public junior colleges, and that many in the engineering field do not question the practicability of giving the work in strong junior units, give promise that the junior college under proper supervision can and will do all the work of the first two years of most engineering curricula. The exceptions most likely to present themselves are mining and architecture. As with forestry, the numbers and proportions of students involved are not large, and there is no reason to believe that the solution of the problem of making the work available cannot be similar to that suggested in discussing that field.

Before leaving consideration of the group of engineering professions, reference should be made to current movements to lengthen the periods of training beyond their typical extent. As this is achieved, the unspecialized content at the lower end of the curricula is almost certain to be enlarged, and as this enlargement takes place the giving in junior colleges of the first two years of the work required will become increasingly feasible.

IV. Summary

From the presentation just concluded it may be assumed that strong junior colleges should find no insurmountable difficulty in endeavoring to provide satisfactorily for the following professional groups:

A. *By two years of work exclusively or almost exclusively general rather than special:*

1. Law (pre-legal or combination curricula)
2. Medicine (pre-medical or combination curricula)
3. Dentistry (combination curricula)
5. Nursing (pre-nursing or combination curricula)
7. Education (pre-education or first two years of four-year curricula)
9. Journalism
17. Chemistry

B. *By two years of work usually for the most part general, but also in considerable part special* (usually the first two years of four-year curricula):

8. Commerce
10. Agriculture
12. Home economics
13. Civil engineering
14. Electrical engineering
15. Mechanical engineering
16. Chemical engineering

C. Until the two-year preprofessional curriculum exclusively general is fully established, *by a one-year preprofessional curriculum exclusively general:*

4. Dentistry (pre-dental curriculum)

D. Until the place of the occupation in question either as a profession or semiprofession is established, *by one year of general work applicable to professional curricula:*

6. Pharmacy (in the case of some four-year curricula in pharmacy two years of such general work would be acceptable)

E. Until the junior college plan is thoroughly established and particular junior college units, few in number because of the small proportion of students concerned, are specially equipped and manned to give the two full years of work, or until curricula are modified to prescribe a larger proportion of work of a general nature, *by one year of general work applicable to professional curricula:*

11. Forestry
18. Mining
19. Architecure

With the more general availability of opportunities of education on the junior college level, it is almost certain that the first two years of curricula in the lines here found to contain considerable of special material will move in the direction of more general content, as is already true for the older professions. In the meantime the special offerings will need to be made, if the student is to remain in the junior college for two years and also complete the professional curricula in the scheduled period. This means that such junior colleges as plan to serve the group of students entering upon agricultural curricula will need to add to the general offering listed near the close of the foregoing chapter a total of 20 to 30 semester hours of work in such courses as farm crops, 3 credits; horticulture, 3; soils, 4; dairy husbandry, 3; agricultural chemistry, 5; poultry, 3; livestock, 3; types and breeds of farm animals, 3. The particular courses and the amounts of credit represented in this and the following lists have been made up from typical requirements as shown in the analyses essayed in the current chapter. In commerce these additional courses might be accounting, 6; commercial geography, 6; investments, 3; and money and banking, 3. In home economics they might be food study, 5; textiles, 2; cookery, 5; costume design, 2; and house decoration, 3. This field, however, lacks so much in the way of standardization of courses and content that less confidence can be placed

in this list than in those for other professions. To give the first two years of the four chief curricula in engineering, viz., civil, electrical, mechanical, and chemical, junior colleges would need to offer descriptive geometry, 3 hours; additional drawing up to 5 or 6 hours or even more; shop courses including wood-working, forging, foundry, and machine shop; surveying up to 6 hours; mechanics, 3; materials of construction, 3. The requisite offerings in professional fields less frequently elected are, like those illustrated, to be found in the tables.

Before leaving the discussion of this portion of the report it will be well to point out again the fact that the description here provided is in terms of the *typical* requirements rather than in terms of the variations from the typical. The fact of variation in the requirements complicates to no small extent the problem of curriculum-making in the junior college. The problem cannot be solved by merely offering the average or modal amount of work required in the general and special fields listed in this study. The problems of curriculum-making for particular students turn out to be problems of articulation with particular professional schools which may or may not prescribe the averages and modal amounts in each field as herein presented. Nevertheless, the central tendencies shown give some measure of the practicability or impracticability in the total situation. Moreover, the junior college officer referred to can always take comfort in the fact that in computing the average we always include some requirements *less* difficult to meet, at least as to the extent of special content required, than those at or near the type thus located.

CHAPTER V

PRACTICES AND ATTITUDES OF FOUR-YEAR COLLEGES TOUCHING THE JUNIOR COLLEGE MOVEMENT

I. The Occasion for the Study and the Source of Information

The reason for making the study.—One factor, if only of temporary significance, bearing on the place and function of the junior college, is the recognition it has or is destined to have in the world of higher education. The two foregoing chapters of Part II have dealt with the problem of whether the junior college can be expected to give the work of the first two years in colleges and universities, but the questions raised in this connection are not fully answered until we know whether or not after the work has been done it is likely to be accepted. Those who are in contact with the movement are aware that universities—at least those in the West and Mid-West—are disposed to accept the work done in approved junior college units and, even more, to look with favor upon their rapid development. There has been some doubt on this score concerning the separate four-year colleges. It was to ascertain the state of practice and opinion in this regard that the study reported in this chapter was made.

The source of information.—A simple form of questionnaire inquiring into practices and attitudes with respect to junior colleges was directed to the registrars of somewhat more than two hundred four-year colleges rather widely distributed over the country. Two bases of selection only were operative in the institutions appealed to for response. In the first place, only institutions exclusively or predominantly separate four-year colleges were included in the list. Among the group were some bearing the name "university," but none of these can be regarded as more than a university in aspiration only. Most of them no longer entertain hopes of this sort, bearing this name usually because the charter of establishment so designates them. Few, indeed, include much more in their organization than the college of liberal arts. In the second place, an effort was made to secure a representation of both recognized and unrecognized colleges, although, as will be seen, by far the larger number were of the former sort. These were drawn from a list referred to elsewhere (Chapter XXII). The unrecognized schools appealed to were also selected as far as possible to represent the entire country.

Answers were returned from 168 colleges. As might be expected from the fact that the blanks were directed to the registrars, the largest number of responses (72) came from these officers. Other officers answering were deans, 40; presidents, 29; secretaries, 8; and vice-presidents, acting president, recorders, chairmen of committees on admission, etc., a few instances

of each. The large proportion of deans and presidents is to be explained partly by the fact that these officers are sometimes in charge of registration, there being no separate officer for this work, and partly by the fact that, inasmuch as the questionnaire inquired after some matters of institutional policy, it was referred by the registrar to some officer in a better position to state policies. To the extent that the latter explanation applies, we have additional assurance that the following digest represents better the attitudes of the four-year colleges.

The distribution of the institutions from which answers more or less usable came is presented in Table XXVI. In this table "East" includes the New England and Middle Atlantic states (with Maryland); "South," the southern states; "West and Middle West," the remaining states.

TABLE XXVI

NUMBER OF COLLEGES MAKING USABLE REPLIES TO QUESTIONNAIRE ON PRACTICES AND ATTITUDES TOUCHING JUNIOR COLLEGES

CLASSIFICATION OF COLLEGES	NUMBER OF COLLEGES			
	East	South	West and Middle West	Total
Recognized	32	14	75	121
Unrecognized	10	17	20	47
TOTALS	42	31	95	168

II. PRACTICES TOUCHING JUNIOR COLLEGES

Proportion of colleges in receipt of applications for advanced standing.—The next table (XXVII) shows the numbers of the institutions included in this study whose officers have or have not received applications for advanced standing from students who have attended junior colleges. It makes clear that applications go to institutions in all sections of the country, but that not all have yet received them. The figures at the bottom of the last two columns indicate that 108, or about two thirds, of this group of colleges have been asked to consider applications. The applications come to a larger proportion of recognized than of unrecognized schools.

Honoring applications for advanced standing.—With very few exceptions all institutions indicated above as receiving applications for advanced standing by students who have been in attendance in junior colleges admit the applicants to such standing. In point of fact, 104 of the 108 schools receiving applications follow such a practice. Of the four colleges remaining, one answers bluntly, "No"; one, "a very few"; the third, "freshman work only"; and the last makes no response. All exceptions are in the eastern

group of colleges. It may be said, therefore, that admitting to advanced standing those who have done work in junior colleges is the all but universal practice.

TABLE XXVII

NUMBERS OF COLLEGES HAVING AND NOT HAVING RECEIVED APPLICATIONS FOR ADVANCED STANDING FROM JUNIOR COLLEGE STUDENTS

(166 answering the question)

CLASSIFICATION OF COLLEGES	NUMBER OF COLLEGES							
	East		South		West and Middle West		Total	
	Yes	No	Yes	No	Yes	No	Yes	No
Recognized	21[a]	11	12[a]	2	50[b]	24	83	37
Unrecognized	4[c]	5	12[c]	5	9[c]	11	25	21
TOTALS	25	16	24	7	59	35	108	58

a. Two institutions report "very few."
b. Four institutions report "very few."
c. One institution reports "very few."

Types of recognition of work done in junior colleges.—The registrars were asked to indicate in the blank of inquiry by checking or by brief description the type of recognition given to work taken in junior colleges, "assuming that the work had been taken in junior colleges accredited by some standardizing association or recognized higher institution." The distribution of responses is shown in Table XXVIII. It appears that for the whole group of colleges concerned, the first two types of recognition have approximately equal followings. Such larger use of the "hour for hour" basis of recognition as is apparent is attributable to the colleges in the West and Middle West, where this is the predominant practice. In southern colleges the recognition only of "such courses as are open to freshmen and sophomores" is the more common practice. The "other types of recognition" set down by thirteen colleges are: on examination, four; on adjustment by heads of departments concerned, three; scaling down of credits, two; investigation of each case separately, two; credit lumped for each year, one; and recognition of freshman courses only, one.

A full description of the practices in recognition will require the presentation of the most frequent of the comments or qualifications volunteered by some of the registering officers at the time of checking one or the other of the first two types of recognition. Seven of the officers describing methods used mention granting credit tentatively or conditionally, the credit not being regarded as finally assigned until the student has demonstrated his ability in the college to which he is transferring. Five speak of a limitation

on total credit granted, the maximum being the usual amount earned by students during two college years, i.e., sixty semester hours. Occasionally other types of restriction are reported, such as a requirement that the student should have received a mark of C or better in the work which he has had in the junior college, that the student must continue in the subjects in which credit is granted, etc.

TABLE XXVIII

NUMBERS OF COLLEGES REPORTING EACH OF THE TYPES OF RECOGNITION OF WORK DONE IN APPROVED JUNIOR COLLEGES

SECTION	HOUR FOR HOUR	ONLY COURSES OPEN TO FRESHMEN AND SOPHOMORES	OTHER TYPES OF RECOGNITION	NO ANSWER	TOTALS
East	8	8	6	3	25
South	7	15	2	..	24
West and Middle West	34	19	5	1	59
TOTALS	49	42	13	4	108

Summary on practices.—(1) Two thirds of the colleges have received applications for advanced standing from students who have done work in junior colleges.

(2) Practically all of those receiving applications admit the candidates to advanced standing.

(3) The more common types of recognition, followed in approximately equal numbers of cases, are the "hour for hour" and the recognition only of courses open to freshmen and sophomores.

(4) A few insist upon examinations in the work for which credit is asked.

(5) A small proportion of colleges volunteer the information that the credit is conditionally rather than finally granted, permanency depending on success in the institution to which the student transfers; others mention a maximum of the usual amount of credit earned in two college years.

III. ATTITUDES OF COLLEGES TOWARD THE JUNIOR COLLEGE MOVEMENT

The second main portion of the blank of inquiry opened with the question,

What do you take to be the attitude of your college toward the junior college movement? a. Encouragement? . . . . . b. Discouragement? . . . . . c. Other description of attitude? . . . . .

Table XXIX gives the distribution of responses. Because no notable difference was found in the answers of recognized and unrecognized colleges, the responses of these two groups have been merged in the table. It should

be noted in passing that the task of classification of responses was not always simple, because the responses were not universally clear-cut and definite. The reader is assured, however, that the data as presented approximate closely the situation they are intended to describe.

The row of totals at the foot of the table shows that, for the country as a whole, the attitude is one of encouragement rather than discouragement. The exception is the group of eastern colleges which show a slight preponderance of negative attitude toward this new movement in higher education.

TABLE XXIX

ATTITUDES OF COLLEGES TOWARD THE JUNIOR COLLEGE MOVEMENT

SECTION	DESCRIPTION OF ATTITUDE				
	Encouragement	Discouragement	Other	No Answer	Totals
East	11	13	12	6	42
South	18	6	6	1	31
West and Middle West	31	16	33	15	95
TOTALS	60	35	51	22	168

The "other" attitudes (see third column of figures) set down by these college officers do not fall under a wide variety. Forty-two of the total of fifty-one responses under this head refer in one form or another to an absence of bias toward either encouragement or discouragement. Terms like the following are used as descriptive of the attitudes: "unbiased," "neutral," "open-minded," "watchful waiting," etc. A few speak of "indifference" or point out that to date no attitude has found expression. Most of the remainder write in partial approval only, as "good for some parts of the country," "see advantages and objections," "desirable for women," etc.

Reasons for attitudes of encouragement.—A large proportion of all who returned the questionnaire supplied statements in response to its last request to "state briefly the reasons for" the attitude indicated. The answers lend themselves readily to classification. The reasons most frequently presented for encouraging the junior college movement are as follows: (1) fifteen point out the effect of the junior college in offering the opportunities of a higher education to many who cannot otherwise have them, i.e., popularizing higher education in bringing it nearer and lowering its cost to the student; (2) eleven refer to the advantages, moral, educational, etc., accruing to students who are diverted from swelling the freshman and sophomore groups in larger colleges and state universities, and the resulting avoidance of "congestion" in such schools; (3) six point to the desirability of having the weaker private four-year colleges become strong junior colleges; while

smaller numbers mention (4) the superior scholarship possible in junior colleges; (5) the "feeding of junior and senior years" in four-year colleges by the junior units; (6) the "natural break" between general and special work at the end of the sophomore year; (7) the removal from the four-year college of those who want only two years of preprofessional work; (8) the "bridging of the gap" between high school and college work, etc. It should be noted that these reasons have much in common with what have been presented earlier in this volume (Chapter II) as the current conceptions of the special purposes of the junior college.

Reasons for attitudes of discouragement.—The reason most frequently held for taking the attitude of discouragement toward the junior college movement is that (1) the standards are likely to be lower than in four-year colleges. This is set down in one form or another by officers of fifteen institutions consulted. It may be worth mentioning that of this number thirteen have admitted junior college students to advanced standing. Most of those raising this objection refer to standards of work, of equipment, of teachers, of methods, or of admission requirements, but an occasional college officer refers to the desirability of having advanced courses in process in the institution in which the student pursues work on the junior college level or fears an unfortunate influence of association of the student with others taking work on the "preparatory" level.

A second group of reasons given center about (2) the desirability of having students attend a single college throughout the four-year period. One of the ten statements classified under this head admits that if the junior college movement gains ground rapidly, it will interfere with the growth of the standard college. The remainder seem to be more concerned for the *student* than for the *institution*. Typical statements of this sort are: "it takes the full four years to get the real good out of that rich body of educative influences we call the 'college tradition'"; "the junior college movement runs counter to the best traditions of ——— [College] which has ever emphasized the four-year course"; the student loses something in shifting from one institution to another as "it takes four years to get a true college spirit"; "the junior college is out of harmony with what we are trying to accomplish. ——— [College] prefers freshmen to junior college graduates." In this connection it is pertinent to quote the major paragraph in a letter received from a college president in response to the blank of inquiry:

> I have no interest in what is called the junior college. I look upon it as a result of the fact that our universities have too much money and too little legitimate educational work to do. I recognize, however, the fact that the money in these institutions and the men who are in them without legitimate educational work to do are certain to make the junior college a part of our educational system. I regret this, but I do not expect to change it. Some of my professors do not agree with me in their estimate of the movement, nor in their feeling about the university life of our country.

Other reasons are given much less frequently. Four college officers believe that (3) junior colleges are not needed in their states, as there are ample facilities for higher education already available. The states from which these replies have come are Iowa, Pennsylvania, and Wisconsin. One or two officers give each of the following reasons: (4) the coming of the junior college will bring even more duplication by the college of high school work than must be done at present; (5) the student in the junior college has a poor opportunity to begin a "major"; (6) "the denominational college is the hope of American spiritual life and power."

Reasons for being without bias toward the junior college movement.—During the explanation of Table IV above, it was pointed out that almost all of those who expressed attitudes which they regard as "other" than those of encouragement or discouragement were "unbiased," "neutral," etc. It now remains to present the reasons given for assuming this attitude. In the majority of instances (nineteen of thirty-one reasons given) the authors of the statements plead lack of experience with the junior college or the recency of the movement. In almost all other cases the reasons given are those which have been given for taking the attitudes as those of encouragement or discouragement. In fact, eight of the remaining twelve are clearly negative in import and might well have been classified as attitudes of discouragement, were it not for the investigator's desire to represent faithfully the states of mind of these college officers.

Summary on attitudes.—(1) For the whole group of colleges represented, the balance of attitude seems to be one of encouragement rather than of discouragement of the junior college movement. The partial exception is the group of eastern colleges consulted, in which the balance is to some extent in the opposite direction.

(2) Where the attitude is not given as that of encouragement or discouragement it is usually posited as one without bias, as neutral, or as still unformulated.

(3) The reasons most commonly given for holding the attitude of encouragement are the anticipated popularization of higher education through the growth of the movement, the advantages accruing from diverting the stream of underclassmen from the larger institutions, and the desirability of finding a position of respectability for the smaller and weaker private colleges. Other reasons are infrequently presented.

(4) The reasons most frequently presented for taking the opposite attitude are the suspicion of low standards in junior colleges, the tendency these new units will have to disrupt college tradition by breaking across the four-year period at its midpoint, and the absence of need of more opportunities for higher education in certain states.

(5) Most of those who state that their attitude is without bias or as yet unformulated plead lack of experience with the new unit as the reason for it.

IV. Conclusion

Neither the current practices of colleges in the matter of granting advanced standing to junior college graduates nor the attitudes of these institutions as expressed by their registering officers and other representatives afford much ground for any feeling but encouragement concerning the ultimate recognition of the new unit and the work given there. Although there are those which balk at acceptance of the work done and whose officers are disposed to question the right of the junior college to a place in the educational family, considering the youth of the movement the situation is full of promise. Only a small proportion of the institutions of which inquiry was made decline to accept the work done either hour for hour or for courses normally open to freshmen and sophomores. Larger proportions assume the attitude of discouragement or one that is more nearly noncommittal, but the junior college seems already to have made much progress into the good graces of college authorities. There is for the most part an interesting approach to agreement between the types of reasons volunteered for encouraging the movement and the claims made for it by its other friends as shown in Chapter II.

As the answers to most of the objections raised to the movement are expressed or implicit at other points in this report, little needs to be said concerning them here. Attention may properly, however, be directed to the plaint of those who deplore that attendance upon a junior college for two years breaks across the conventional four-year period of collegiate education. It will be shown in a subsequent chapter (XXIII) that in middle western colleges at least for a full half of the student body the four-year period is now disrupted by the opening of the third year. Chapter XXII also indicates that this disruption is increasing rather than decreasing. In addition, these critics of the junior college idea forget that, since most public junior colleges are upward extensions of the high school, if they tend to shorten the period of training in the upper unit, they lengthen it by just as much as in the lower. This fact should be worth something in the way of compensation. Since subsequently (Chapter XXXVII) it will be seen that the better ultimate type of establishment of junior college work is to be as the upper two years of a four-year senior high school unit, there is even less ground for disparaging the junior college for the disruption referred to. It will be within the truth to say, as may be judged by the materials of Chapter XV which presents the facts on the advancing age of the college entrant, that the typical ages of students in this reorganized senior high school will be very similar to those of college students in the early decades of the preceding century.

CHAPTER VI

THE JUNIOR COLLEGE AND MENTAL DEMOCRATIZATION OF HIGHER EDUCATION

I. The Problem

Owing to current conceptions of special purposes bearing on the popularization and democratization of higher education through the establishment of the junior college, students of the new unit should give some attention to the mental capacities of those who are or who are likely to be enrolled in it. We refer here to those special purposes which pertain to the "rounding out" of the education of those who will not, cannot, or should not "go on" (Purpose 2, Figure 4), to the provision of occupational training for semiprofessions (Purpose 3); and to the popularization of higher education through lowering the cost of such education and bringing it nearer the home of the student (Purpose 9). The expectation of many among those whose statements have been incorporated in the analysis of purposes presented, sometimes expressed and sometimes implied, is that this popularization will and should be accompanied by a wider range of mentality than is now represented in these years of our colleges and universities.

The recent development of what are called mental tests makes it possible (1) to ascertain the extent to which the expectation is being realized and also (2) to canvass, at least partially, the question of whether our higher institutions are disposed to attempt to cope with as much of this type of popularization as has manifested itself without junior college reorganization. Correspondingly, this section will include (1) a comparison by means of mental tests of students in junior colleges with those in the same years of standard higher institutions, and (2) a study of a group of students in one standard higher institution as to the relation of their mental test scores to length of stay, degree of success, and subjects pursued during residence.

II. Comparison of Junior College Students with Those Enrolled in Corresponding Years of Colleges and Universities

A. The Army Alpha Tests

(a) *The junior college scores.*—The Army Alpha Test and the Thurstone Test for College Freshmen were both used in this portion of the study. The reason for taking recourse to the former, in view of the more recent appearance of better tests for use with college students, is the availability in educational literature and elsewhere of results of these tests as given in a number of higher institutions. Norms and distributions on the Thurstone Test made their appearance in print after the mental test program, the report of which is first to be presented, was already under way, but plans

were sufficiently modified to incorporate some data on the latter for such additional information as they afford.

TABLE XXX

DISTRIBUTION OF SCORES MADE IN THE ARMY ALPHA TEST (FORM 7) BY 581 FRESHMEN AND 273 SOPHOMORES IN TEN NORTHERN PUBLIC AND PRIVATE JUNIOR COLLEGES

(Tests given December to May, 1921-22)

SCORES	GROUP OF STUDENTS											
	Freshmen						Sophomores					
	Men		Women		Total		Men		Women		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
200-212	....	....	....	....	....	....	....	....	....	....	....	....
195-199	....	....	....	....	....	....	....	....	....	....	....	....
190-194	....	....	1	.2	1	.2	....	....	3	1.2	3	1.1
185-189	....	....	....	....	....	....	....	....	2	.8	2	.7
180-184	6	4.5	4	.9	10	1.7	....	....	....	....	....	....
175-179	3	2.3	6	1.3	9	1.6	....	....	4	1.6	4	1.5
170-174	5	3.7	9	2.0	14	2.4	3	10.7	5	2.0	8	2.9
165-169	7	5.3	8	1.8	15	2.6	1	3.6	12	4.9	13	4.8
160-164	6	4.5	17	3.8	23	3.9	5	17.8	15	6.1	20	7.3
155-159	11	8.3	17	3.8	28	4.8	5	17.8	8	3.3	13	4.8
150-154	13	9.8	31	6.9	44	7.6	....	....	14	5.7	14	5.1
145-149	13	9.8	26	5.8	39	6.7	....	....	14	5.7	14	5.1
140-144	13	9.8	36	8.0	49	8.4	2	7.1	25	10.2	27	9.9
135-139	7	5.3	32	7.2	39	6.7	3	10.7	27	11.0	30	11.0
130-134	7	5.3	35	7.8	42	7.2	4	14.3	19	7.8	23	8.4
125-129	7	5.3	38	8.5	45	7.7	1	3.6	23	9.4	24	8.8
120-124	5	3.7	31	6.9	36	6.2	....	....	17	6.9	17	6.2
115-119	6	4.5	32	7.2	38	6.5	1	3.6	13	5.3	14	5.1
110-114	7	5.3	27	6.0	34	5.9	1	3.6	11	4.5	12	4.4
105-109	5	3.7	22	4.9	27	4.6	....	....	7	2.9	7	2.6
100-104	2	1.5	13	2.9	15	2.6	....	....	4	1.6	4	1.5
95- 99	3	2.3	24	5.4	27	4.6	....	....	4	1.6	4	1.5
90- 94	5	3.7	15	3.4	20	3.4	....	....	7	2.9	7	2.6
85- 89	....	....	8	1.8	8	1.4	1	3.6	3	1.2	4	1.5
80- 84	2	1.5	6	1.3	8	1.4	1	3.6	2	.8	3	1.1
75- 79	....	....	1	.2	1	.2	....	....	2	.8	2	.7
70- 74	....	....	5	1.1	5	.9	....	....	2	.8	2	.7
65- 69	....	....	1	.2	1	.2	....	....	1	.4	1	.4
60- 64	....	....	1	.2	1	.2	....	....	....	....	....	....
55- 59	....	....	1	.2	1	.2	....	....	....	....	....	....
50- 54	....	....	1	.2	1	.2	....	....	....	....	....	....
45- 49	....	....	....	....	....	....	....	....	....	....	....	....
40- 44	....	....	....	....	....	....	....	....	1	.4	1	.4
TOTAL...	133	100.1	448	99.9	581	100.0	28	100.0	245	99.8	273	99.7
MEDIAN ..	144		129.7		132.7		155		136.2		137.1	

The tests were all given under standard conditions. The authorities of no junior college were asked to co-operate until the investigator had made a visit to the institution, located some person on the staff who had had some experience in giving standard tests, and assured himself of the integrity

of the authorities concerned. In the instances of several schools the numbers of test scores is less than the number of students enrolled at the time. The writer is confident that the discrepancy in no case represents effort at omission of less capable students, but is usually to be explained by the fact that the tests were given to all students at hand at the time of testing.

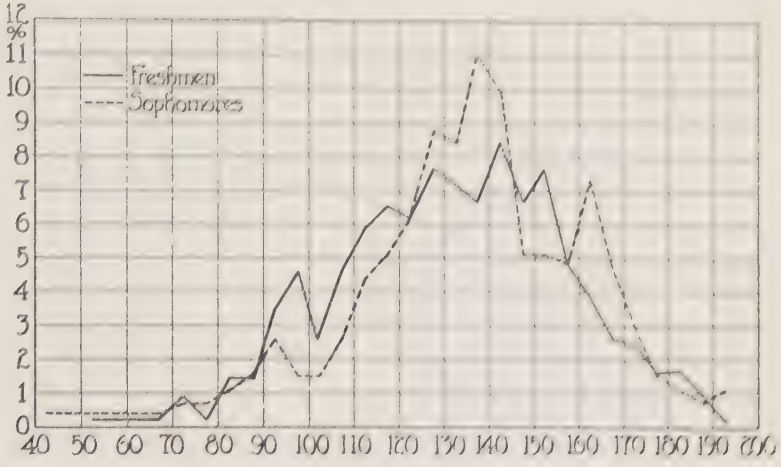

Figure 8

Percentage distributions of Alpha scores of 581 freshman and 273 sophomores in 10 northern public and private junior colleges

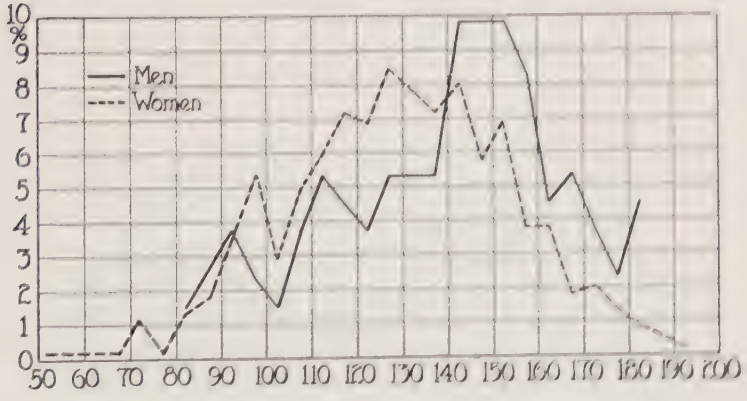

Figure 9

Percentage distributions of Alpha scores of 133 freshman men and 448 freshman women in 10 northern public and private junior colleges

The description of the junior college student body as to mentality will be accomplished in two types of comparison—first, of groups within the junior colleges themselves, and, second, of groups of junior college students with students in other higher institutions. The first of the former is provided in the middle and last columns of Table XXX and in Figure 8,

TABLE XXXI

DISTRIBUTION OF SCORES MADE ON ARMY ALPHA TEST (FORM 7) BY 189 FRESHMAN WOMEN IN EIGHT PUBLIC JUNIOR COLLEGES, 63 SOPHOMORE WOMEN IN SEVEN PUBLIC JUNIOR COLLEGES, AND 259 FRESHMAN AND 182 SOPHOMORE WOMEN IN TWO NORTHERN PRIVATE JUNIOR COLLEGES

(Tests given December to May, 1921-22)

SCORES	GROUP OF WOMEN STUDENTS							
	Public Junior Colleges				Private Junior Colleges			
	Freshmen		Sophomores		Freshmen		Sophomores	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
200-212	...	...	...	...	...	...	...	....
195-199	...	...	...	...	...	...	...	...
190-194	1	0.5	...	...	...	...	3	1.7
185-189	...	...	1	1.6	...	...	1	0.6
180-184	2	1.1	...	...	2	0.8	...	...
175-179	3	1.6	3	4.8	3	1.2	1	0.5
170-174	6	3.2	...	...	3	1.2	5	2.8
165-169	4	2.1	5	7.9	4	1.6	7	3.9
160-164	9	4.8	4	6.3	8	3.1	11	6.0
155-159	12	6.4	5	7.9	5	1.9	3	1.7
150-154	12	6.3	7	11.1	19	7.3	7	3.9
145-149	9	4.8	3	4.8	17	6.6	11	6.0
140-144	19	10.1	7	11.1	17	6.6	18	9.9
135-139	15	7.9	5	7.9	17	6.6	22	12.1
130-134	15	7.9	4	6.3	20	7.7	15	8.2
125-129	17	9.0	8	12.7	21	8.1	15	8.2
120-124	8	4.2	2	3.2	23	8.9	15	8.2
115-119	12	6.3	2	3.2	20	7.7	11	6.0
110-114	11	5.8	2	3.2	16	6.2	9	5.0
105-109	8	4.2	1	1.6	14	5.4	6	3.3
100-104	4	2.1	1	1.6	9	3.3	3	1.6
95- 99	5	2.1	...	...	19	7.3	4	2.2
90- 94	6	3.2	2	3.2	9	3.3	5	2.8
85- 89	4	2.1	1	1.6	4	1.6	2	1.1
80- 84	2	1.1	...	...	4	1.6	2	1.1
75- 79	1	0.5	...	...	...	...	2	1.1
70- 74	2	1.1	...	...	3	1.2	2	1.1
65- 69	...	...	...	...	1	0.4	1	0.5
60- 64	...	....	...	...	1	0.4	...	...
55- 59	1	0.5	...	...	...	...	...	...
50- 54	1	0.5	...	...	...	...	...	...
45- 49	...	...	...	...	...	...	...	...
40- 44	...	...	...	...	...	...	1	0.5
TOTAL	189	99.9	63	100.0	259	100.0	182	100.0
MEDIAN	134.2		142.5		126.5		134.3	

which compare the distribution of scores and the medians of 581 freshmen and of 273 sophomores in ten northern public and private junior colleges. While the distributions have much in common, that for sophomores is somewhat superior to that for freshmen. This interpretation is corroborated by the median, which is approximately five points higher for the second year than for the first year group.

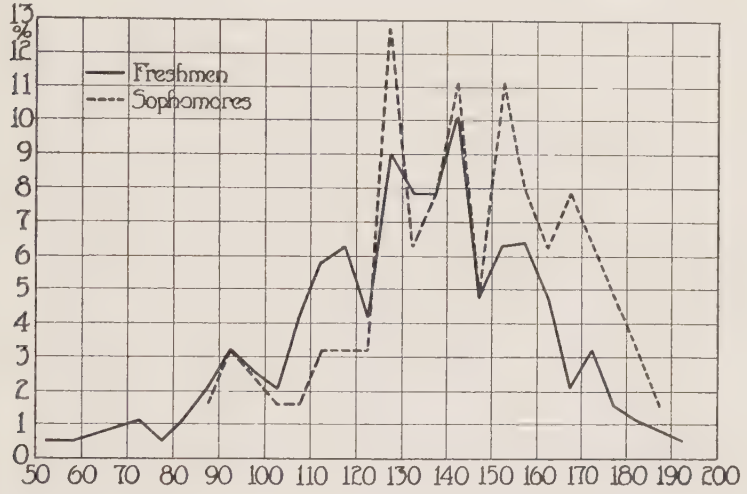

Figure 10

Percentage distributions of Alpha scores of 189 freshman and 63 sophomore women in 8 public junior colleges

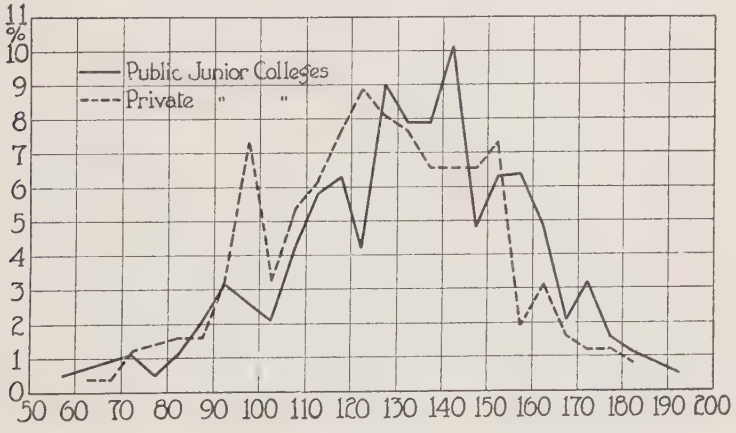

Figure 11

Percentage distributions of Alpha scores of 189 freshman women in 8 public and 259 freshman women in 2 northern private junior colleges

The third and fifth columns of Table XXX with Figure 9 afford a comparison of freshman men and freshman women in these same junior colleges. They show the superiority of the scores of the men over those of the women usually found in studies made with the Army Alpha Test, commonly explained by saying that this test, being intended for use with the army draft, is a "men's" test, not as well suited to testing the mentality of women.

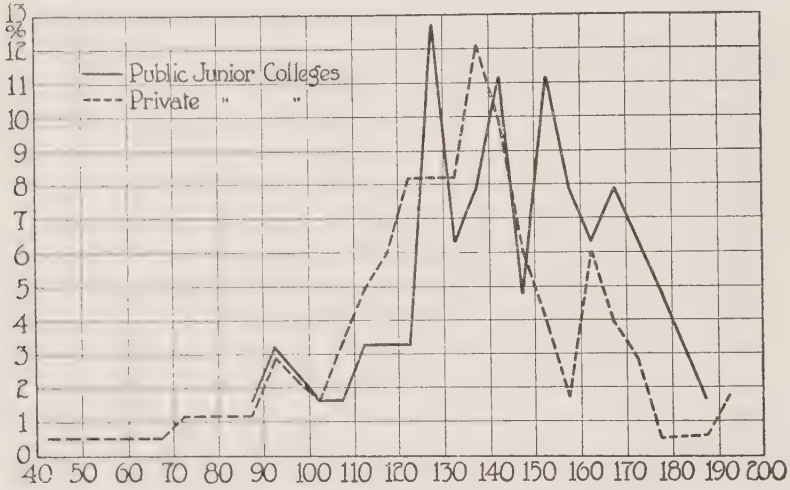

Figure 12

Percentage distributions of 63 sophomore women in 7 public and 182 sophomore women in 2 northern private junior colleges

Table XXXI affords opportunities to compare freshman and sophomore women within each of the two groups of junior colleges represented, public and private. Figure 10 brings out more clearly one of these comparisons. Both comparisons show the expected differences between the two classes in each group of schools. The table also makes possible a comparison of freshman women as well as sophomore women in public and private junior colleges. The two latter comparisons are facilitated by Figures 11 and 12. Both of these figures make manifest a notable difference in distributions and medians in the two types of schools, the data for public junior colleges being somewhat superior. This is in part to be explained by some extent of difference in age and extent of previous training between the two groups. While the two private junior colleges included are northern schools, they draw some of their students from southern states where eleven-year public school systems are to be found.

TABLE XXXII

DISTRIBUTION OF SCORES MADE ON ARMY ALPHA TEST (FORM 7) BY 133 FRESHMAN AND 28 SOPHOMORE MEN ENROLLED IN EIGHT PUBLIC JUNIOR COLLEGES

(Tests given December to May, 1921-22)

SCORES	CLASSIFICATION			
	Freshmen		Sophomores	
	Number	Per cent	Number	Per cent
200-212	...	...	...	...
195-199	...	...	...	...
190-194	...	...	...	...
185-189	...	...	...	...
180-184	6	4.5	...	...
175-179	3	2.3	...	...
170-174	5	3.7	3	10.7
165-169	7	5.3	1	3.6
160-164	6	4.5	5	17.8
155-159	11	8.3	5	17.8
150-154	13	9.8	...	...
145-149	13	9.8	...	...
140-144	13	9.8	2	7.1
135-139	7	5.3	3	10.7
130-134	7	5.3	4	14.3
125-129	7	5.3	1	3.6
120-124	5	3.7	...	...
115-119	6	4.5	1	3.6
110-114	7	5.3	1	3.6
105-109	5	3.7	...	...
100-104	2	1.5	...	...
95- 99	3	2.3	...	...
90- 94	5	3.7	...	...
85- 89	...	...	1	3.6
80- 84	2	1.5	1	3.6
75- 79	...	...	...	...
70- 74	...	...	...	...
65- 69	...	...	...	...
60- 64	...	...	...	...
55- 59	...	...	...	...
50- 54	...	...	...	...
45- 49	...	...	...	...
40- 44	...	...	...	...
TOTAL	133	100.1	28	100.0
MEDIAN	144		155	

Comparisons are not made at this point of public and private junior college men because data are at hand for only one of the latter enrolling men. The number of men involved is not large, making for an attenuated distribution that can have little meaning.

A comparison of freshman and sophomore men in public junior colleges is provided by Table XXXII and Figure 13. The number of sophomores included in the junior colleges giving the tests and, therefore, in the table and chart, was so small that the distribution is irregular and broken. The data show, however, the anticipated difference between the two groups, both in the distributions and in the medians.

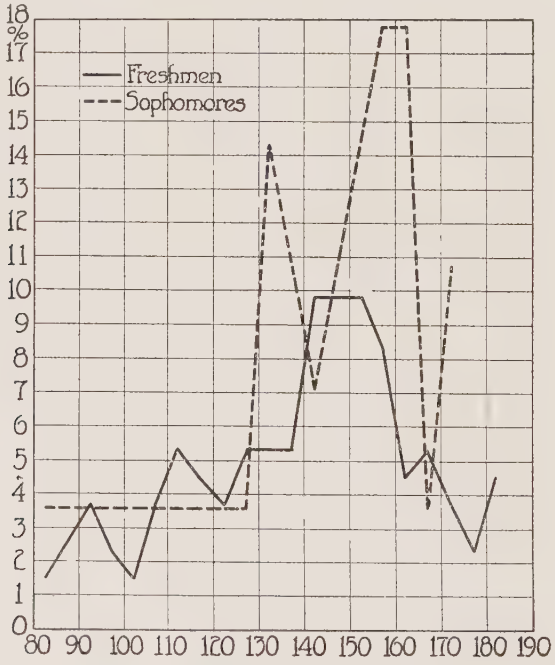

Figure 13

Percentage distributions of Alpha scores of 133 freshman and of 28 sophomore men in 8 public junior colleges.

No matter how desirable it is to illustrate distributions for individual junior colleges, the usual small number enrolled does not make it feasible.

Junior college and standard college and university scores compared.—It should be apparent that the fact or extent of popularization of higher education, as it concerns the representation of wider range of mental levels, cannot be ascertained without comparison of the data just presented with similar data from standard four-year colleges and universities. Such comparisons are our next concern.

TABLE XXXIII

DISTRIBUTIONS OF SCORES MADE IN THE ARMY ALPHA TEST BY 322 PUBLIC AND 254 PRIVATE JUNIOR COLLEGE FRESHMEN AND 4479 FRESHMEN IN SIX COLLEGES AND UNIVERSITIES

(Eight public and two private junior colleges included)

SCORES	GROUP OF FRESHMEN					
	Public Junior College		Private Junior College		College and University	
	Number	Per cent	Number	Per cent	Number	Per cent
200-212	...	...	...	...	4	0.1
195-199	...	...	...	...	18	0.4
190-194	1	0.3	...	...	20	0.4
185-189	...	...	...	...	39	0.9
180-184	8	2.5	2	0.8	77	1.7
175-179	6	1.9	3	1.2	133	3.0
170-174	11	3.4	3	1.2	156	3.5
165-169	11	3.4	4	1.6	193	4.3
160-164	15	4.7	8	3.1	218	4.9
155-159	23	7.1	5	1.9	271	6.1
150-154	25	7.8	19	7.3	282	6.3
145-149	22	6.8	17	6.6	295	6.6
140-144	32	9.9	17	6.6	351	7.8
135-139	22	6.8	17	6.6	278	6.2
130-134	22	6.8	20	7.7	296	6.6
125-129	24	7.5	21	8.1	261	5.8
120-124	13	4.0	23	8.9	254	5.7
115-119	18	5.6	20	7.7	248	5.5
110-114	18	5.6	16	6.2	189	4.2
105-109	13	4.0	14	5.4	194	4.3
100-104	6	1.9	9	3.3	153	3.4
95- 99	8	2.5	19	7.3	141	3.2
90- 94	11	3.4	9	3.3	109	2.4
85- 89	4	1.2	4	1.6	82	1.8
80- 84	4	1.2	4	1.6	62	1.4
75- 79	1	0.3	...	...	47	1.0
70- 74	2	0.6	3	1.2	27	0.6
65- 69	...	...	1	0.4	26	0.6
60- 64	...	...	1	0.4	25	0.6
55- 59	1	0.3	...	...	9	0.2
50- 54	1	0.3	...	...	9	0.2
45- 49	...	...	...	...	5	0.1
40- 44	...	...	...	...	3	0.1
Below 39	...	...	...	...	4	0.1
TOTAL	322	99.8	259	100.0	4479	100.0
MEDIAN	138.4		126.5		136.7	

A distribution of 4479 Army Alpha Test scores for freshmen in six colleges and universities is presented in the two right-hand columns of Table XXXIII. The institutions represented are Brown University (205 students),[1] University of Illinois (536),[2] University of Minnesota (463),[3] Oberlin College (330),[4] Ohio State University (2545),[5] and Yale (400).[6] The time of giving the tests in each of these institutions was: Brown, in the fall of 1919; Illinois, March, 1919; Minnesota, January, 1919; Oberlin, December, 1919; Ohio State, October, 1919; Yale, in the fall of 1919. In all but Illinois and Minnesota they were given in the fall of 1919, in the school year following the last "thin" one of the war period. In these two schools the tests were given *after* the discontinuance of the S.A.T.C. For all these groups except in Ohio State University, liberal arts freshmen only have been included; for this one institution students of freshman classification in all colleges with courses open to high school graduates are included.

The first comparison to be made is of the two columns referred to with the freshman totals in Table XXX. The comparison is facilitated by Figure 14, which indicates a large extent of correspondence of the two distributions. Nevertheless, from the standpoint of mental level, both the distributions and the median points favor the college and university group to some extent.

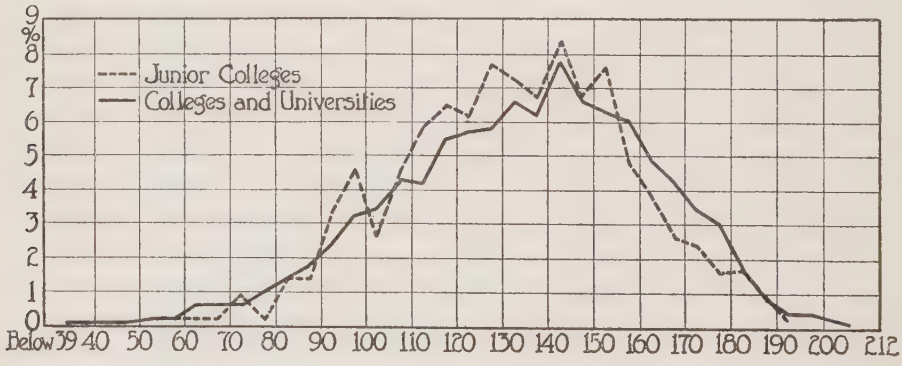

Figure 14

Percentage distributions of Alpha scores of 581 freshmen in 10 public and northern private junior colleges and of 4479 freshmen in 6 colleges and universities

[1] Distribution of scores supplied by Professor Stephen S. Colvin, Brown University. See also an article by him in *Educational Review* 62: 134-48.

[2] Scores for freshmen in the College of Liberal Arts and Sciences only. Distribution supplied by Director W. S. Monroe, Bureau of Educational Research, University of Illinois. See also D. S. Hill, Results of Intelligence Tests at the University of Illinois. *School and Society* 9: 542-45.

[3] Scores for freshmen in the College of Science, Literature, and the Arts supplied by Professor M. J. Van Wagenen. See also *Educational Administration and Supervision* 5: 163 ff.

[4] Edward S. Jones. *School and Society* 11: 389-90.

[5] E. S. Noble and G. F. Arps. *School and Society* 11: 233 ff.

[6] Distribution of scores supplied by Dr. J. E. Anderson, Yale University. See also *School and Society* 11: 417-20.

The six columns of data presented in Table XXXIII and the three distributions in Figure 15 add to the comparison just made the opportunity to compare public and private junior college freshmen separately with the distribution in colleges and universities. The distribution of public junior college freshmen is shown to be not noticeably different from what it is in the colleges and universities when the data for the latter are assembled into a composite group. As is to be anticipated from the partial explanation supplied above, both the groups so far considered are to some extent superior to freshmen in private junior colleges.

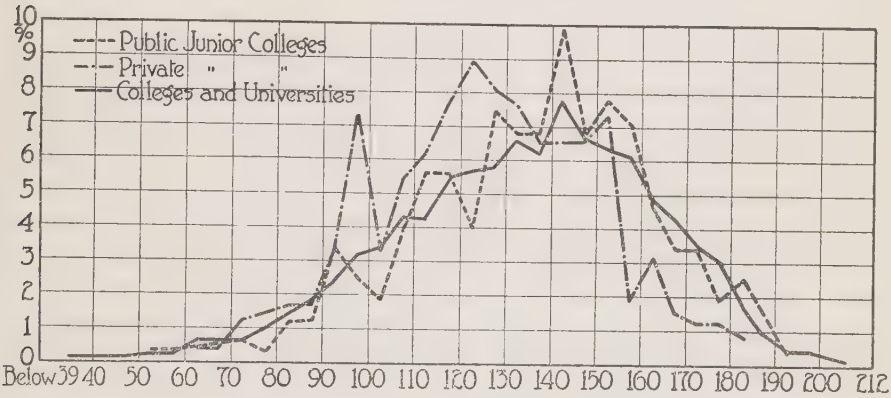

Figure 15

Percentage distributions of Alpha scores of 322 public junior college, 259 private junior college, and 4479 college and university freshmen

Table XXXIV and Figure 16 provide a comparison of junior college sophomores in public and private institutions with students of the same classification in two universities, Illinois and Ohio State. The numbers of both institutions and students involved is less than in the comparisons of freshmen so far presented, but there are enough to afford a justification for presenting the materials. The students of this classification in public junior colleges are seen to be somewhat higher with respect to both distribution and median than those in the two universities, although the difference is not marked, nor probably fully representative, in view of the small numbers of public junior college sophomores included (91). The sophomores in private junior colleges, for reasons already given, have a lower distribution and median than do either of the other groups. Data offering a comparison of public and private junior college sophomores combined with those in the two universities represented show no notable differences, either with respect to distributions or medians. In fact, the medians are less than two points apart, being, respectively, 137.1 and 138.8.

TABLE XXXIV

DISTRIBUTIONS OF SCORES IN THE ARMY ALPHA TEST OF SOPHOMORES IN SEVEN PUBLIC JUNIOR COLLEGES (91 STUDENTS) IN TWO NORTHERN PRIVATE JUNIOR COLLEGES (182 STUDENTS) AND IN TWO STATE UNIVERSITIES (1663 STUDENTS)

SCORES	GROUP OF SOPHOMORES					
	Public Junior College		Private Junior College		Universities	
	Number	Per cent	Number	Per cent	Number	Per cent
200-212	...	...	...	...	3	0.2
195-199	...	...	...	...	2	0.1
190-194	...	...	3	1.7	8	0.5
185-189	1	1.1	1	0.5	21	1.3
180-184	...	...	...	...	29	1.7
175-179	3	3.3	1	0.5	47	2.8
170-174	3	3.3	5	2.8	82	4.9
165-169	6	6.6	7	3.9	80	4.8
160-164	9	9.9	11	6.0	76	4.6
155-159	10	11.0	3	1.7	101	6.1
150-154	7	7.7	7	3.9	123	7.4
145-149	3	3.3	11	6.0	123	7.4
140-144	9	9.9	18	9.9	107	6.4
135-139	8	8.8	22	12.1	126	7.6
130-134	8	8.8	15	8.2	115	6.9
125-129	9	9.9	15	8.2	102	6.1
120-124	2	2.2	15	8.2	90	5.4
115-119	3	3.3	11	6.0	90	5.4
110-114	3	3.3	9	4.9	72	4.3
105-109	1	1.1	6	3.3	52	3.1
100-104	1	1.1	3	1.6	48	2.9
95- 99	...	...	4	2.2	35	2.1
90- 94	2	2.2	5	2.8	30	1.8
85- 89	2	2.2	2	1.1	33	2.0
80- 84	1	1.1	2	1.1	16	1.0
75- 79	...	...	2	1.1	13	0.8
70- 74	...	...	2	1.1	12	0.7
65- 69	...	...	1	0.5	7	0.4
60- 64	...	...	...	...	5	0.3
55- 59	...	...	...	...	6	0.4
50- 54	...	...	...	...	...	...
45- 49	...	...	...	...	4	0.2
40- 44	...	...	1	0.5	1	0.1
Below 39	...	...	...	...	4	0.2
TOTAL	91	100.0	182	99.8	1663	99.9
MEDIAN	143.1		134.3		138.8	

To give some idea of the small extent of variation among the eight public junior colleges represented and of the relationship of that variation to the distribution of freshmen in colleges and universities, Table XXXV and Figure 17 are presented. The former gives the distributions and median scores of two public junior colleges presenting almost as wide a difference in both as is to be found in this group of public junior colleges. Junior College C represents the lowest distribution among the eight. There are three with distributions slightly above that shown for Junior College H, but the numbers of students included are too small to make a comparison practicable. Figure 16 introduces into the comparison the distribution for college and university freshmen shown in the last two columns of Table XXXIII. There are apparent no striking differences, except that, on account of the smaller numbers included, the lines for the two junior colleges present a much more rugged contour.

Figure 16

Percentage distributions of Alpha scores of sophomores in 7 public junior colleges (91 students), in 2 northern private junior colleges (182 students), and in 2 state universities (1663 students)

As our higher institutions in such a study as the one here made show far from identical distributions, the last comparisons to be made will be of junior college freshmen with students of the same classification in individual colleges and universities which have so far only been represented here in one group. Distributions and medians for the latter are given in Table XXXVI. The data for all junior college freshmen have already been presented in the sixth and seventh columns of Table XXX. Facilitation of the comparisons is afforded by Figures 18 and 19.

TABLE XXXV

DISTRIBUTION OF SCORES IN THE ARMY ALPHA TEST (FORM 7) OF FRESHMEN IN TWO PUBLIC JUNIOR COLLEGES

SCORES	JUNIOR COLLEGE			
	C		H	
	Number	Per cent	Number	Per cent
190-194	...	...	1	1.6
185-189	...	...	...	...
180-184	...	...	1	1.6
175-179	...	...	3	4.8
170-174	2	3.6	3	4.8
165-169	2	3.6	4	6.3
160-164	2	3.6	4	6.3
155-159	3	5.5	6	9.5
150-154	4	7.3	2	3.2
145-149	4	7.3	5	7.9
140-144	5	9.1	2	3.2
135-139	2	3.6	5	7.9
130-134	4	7.3	3	4.8
125-129	5	9.1	7	11.1
120-124	2	3.6	1	1.6
115-119	5	9.1	3	4.8
110-114	2	3.6	3	4.8
105-109	...	...	2	3.2
100-104	1	1.8	2	3.2
95- 99	2	3.7	1	1.6
90- 94	5	9.1	2	3.2
85- 89	1	1.8	2	3.2
80- 84	1	1.8	1	1.6
75- 79	...	...	...	...
70- 74	1	1.8	...	...
65- 69	...	...	...	...
60- 64	...	...	...	...
55- 59	1	1.8	...	...
50- 54	1	1.8	...	...
TOTAL	55	99.8	63	100.0
MEDIAN	130.6		139.5	

These tables and the first of the figures make clear that the distributions of mentality in freshmen are not essentially different for junior colleges than for state universities. The second of these figures, on the other hand, shows a marked contrast of distributions and wide distances between the medians. The contrast for Yale is more striking than that for Oberlin. In attempting to account for the larger difference where the former institution is concerned, it should be kept in mind that Oberlin enrolls both men and women, and that, on the average, men score about ten points higher than women on the Army Alpha Test.

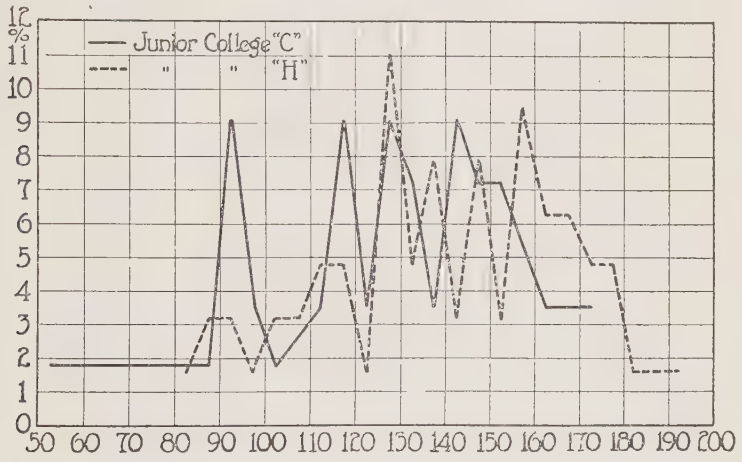

Figure 17

Percentage distributions of Alpha scores of freshmen in 2 public junior colleges

B. The Thurstone Tests

Thurstone's Psychological Examination was given to 206 freshmen (122 men and 84 women) in five public junior colleges. The results of the scoring are presented in Table XXXVII and Figure 20, both of which include also the distribution on the same test for 5495 freshmen in thirty-two colleges of liberal arts assembled by the author of the test.[7] The results with junior college freshmen are, except for a less regular contour on account of smaller number, in no essential respect different from those where large numbers of freshmen in four-year colleges are concerned. The results, therefore, tend to confirm any conclusions to be drawn from those obtained from the Army tests.

[7] L. L. Thurstone, Cycle Omnibus Intelligence Test for College Freshmen. *Journal of Educational Research* 4: 265-78. November, 1921. Those acquainted with this reference will recognize that the distribution is here not presented in the identical form used by Professor Thurstone. The reason for change is the desirability of having a uniform mode of presentation throughout this portion of the report.

TABLE XXXVI

DISTRIBUTIONS OF SCORES IN THE ARMY ALPHA TESTS OF FRESHMEN IN FOUR COLLEGES AND UNIVERSITIES

SCORES	COLLEGE OR UNIVERSITY							
	Minnesota		Ohio State		Oberlin		Yale	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
200-212	...	...	1	0.0	3	0.9	...	...
195-199	1	0.2	3	0.1	2	0.6	7	1.8
190-194	1	0.2	6	0.2	2	0.6	6	1.5
185-189	...	...	14	0.6	6	1.8	11	2.8
180-184	4	0.9	28	1.1	11	3.3	22	5.5
175-179	6	1.3	50	1.9	14	4.2	31	7.8
170-174	13	2.8	56	2.2	12	3.6	45	11.3
165-169	9	1.9	83	3.3	24	7.3	39	9.8
160-164	16	3.5	88	3.4	28	8.5	35	8.8
155-159	20	4.3	135	5.3	32	9.7	43	10.8
150-154	31	6.7	139	5.5	23	7.0	33	8.3
145-149	25	5.4	157	6.2	25	7.6	28	7.0
140-144	40	8.6	195	7.7	28	8.5	28	7.0
135-139	35	7.6	150	5.9	28	8.5	14	3.5
130-134	33	7.1	179	7.0	18	5.5	17	4.3
125-129	38	8.2	136	5.3	19	5.8	15	3.8
120-124	26	5.6	161	6.3	16	4.9	8	2.0
115-119	26	5.6	179	7.0	12	3.6	5	1.3
110-114	17	3.7	132	5.2	10	3.0	7	1.8
105-109	29	6.3	129	5.1	5	1.5	3	0.8
100-104	22	4.8	113	4.4	4	1.2	...	...
95- 99	22	4.8	95	3.7	5	1.5	1	0.3
90- 94	12	2.6	78	3.1	1	0.3	2	0.5
85- 89	10	2.2	62	2.4	...	...	...	...
80- 84	6	1.3	49	1.9	...	...	...	...
75- 79	6	1.3	39	1.5	1	0.3	...	...
70- 74	4	0.9	20	0.8	...	...	...	...
65- 69	5	1.1	20	0.8	1	0.3	...	...
60- 64	3	0.6	22	0.9	...	...	...	...
55- 59	...	...	9	0.4	...	...	...	...
50- 54	...	...	8	0.3	...	...	...	...
45- 49	2	0.4	3	0.1	...	...	...	...
40- 44	1	0.2	2	0.1	...	...	...	...
Below 39	...	...	4	0.2	...	...	...	...
TOTAL	463	100.1	2545	99.9	330	100.0	400	100.0
MEDIAN	130.4		130.3		148.4		159.5	

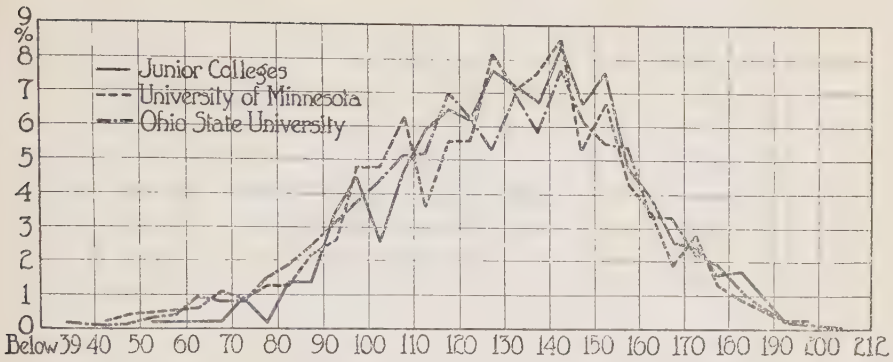

Figure 18

Percentage distributions of Alpha scores of freshmen in 10 public and northern private junior colleges (581 students), in the College of Science, Literature, and the Arts of the University of Minnesota (463 students), and in the Ohio State University (2545 students)

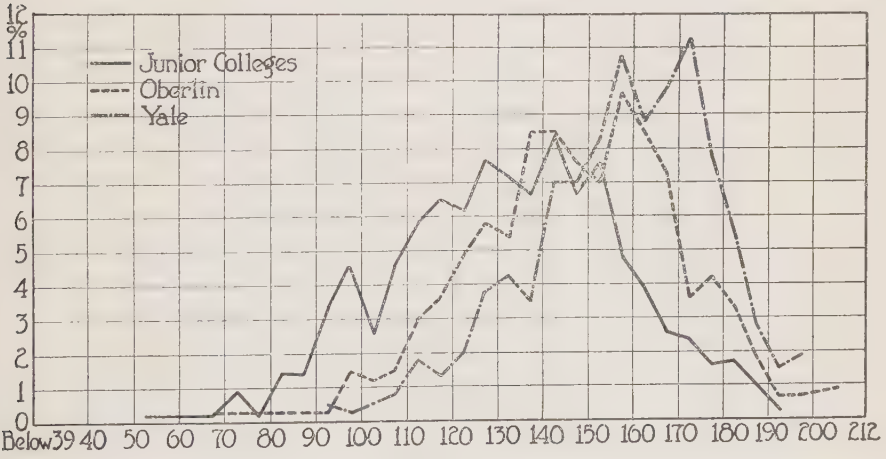

Figure 19

Percentage distributions of Alpha scores of freshmen in 10 public and northern private junior colleges (581 students), in Oberlin College (330 students), and in Yale (400 students)

III. Significance for the Junior College Movement

The most obvious point of significance in the findings just presented as to the mental character of junior college students is that the authorities in higher institutions, more especially our state universities, have little or no grounds for the fear that the junior college in its present state of development brings into their upper years a flood of mentally incompetent students.

These data make clear that junior college students are in this respect about on a par with students of the same classification in most colleges and universities.

TABLE XXXVII

DISTRIBUTIONS OF SCORES ON THE THURSTONE TEST OF 206 FRESHMEN IN FIVE PUBLIC JUNIOR COLLEGES AND OF 5495 FRESHMEN IN THIRTY-FOUR COLLEGES

SCORES	JUNIOR COLLEGES						COLLEGES	
	MEN		WOMEN		TOTAL			
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
160-169	...	...	...	...	...	...	4	0.1
150-159	2	1.6	1	1.2	3	1.5	31	0.6
140-149	2	1.6	...	...	2	1.0	77	1.4
130-139	2	1.6	...	...	2	1.0	123	2.2
120-129	6	4.9	3	3.6	9	4.4	262	4.8
110-119	7	5.7	7	8.3	14	6.8	395	7.2
100-109	11	9.0	5	6.0	16	7.8	657	12.0
90- 99	18	14.8	22	26.2	40	19.4	787	14.3
80- 89	23	18.9	15	17.9	38	18.4	852	15.5
70- 79	20	16.4	10	11.9	30	14.6	846	15.4
60- 69	17	13.9	13	15.5	30	14.6	732	13.3
50- 59	12	9.8	5	6.0	17	8.3	422	7.7
40- 49	1	0.8	2	2.4	3	1.5	209	3.8
30- 39	1	0.8	1	1.2	2	1.0	76	1.4
20- 29	...	...	...	...	...	...	8	0.3
10- 19	...	...	...	...	...	...	4	0.1
TOTAL	122	99.8	84	100.2	206	100.3	5495	100.1
AVERAGE	86.8	...	86.5	...	86.5	...	86.6	...

Those who espouse the junior college from the standpoint of hope of its performance of those special purposes having most intimate relationship to the popularization and democratization of higher education, i.e., Purposes 2, 3, and 9 (referred to at the opening of this description of the mental character of the student) will be inclined to deplore the fact that, even in this early stage of its development, this new unit should not be enrolling a larger proportion of students in the lower ranges represented. They will not, of course, deplore the presence of a large number of superior minds among the student body, their regret being associated with the attenuation at the lower end of the distribution.

After all, it is not especially to be wondered at that the junior colleges have not yet achieved the type of popularization here alluded to. The movement is still in its youth. Being so, its full scope of function is not yet clear

in the minds of all those connected with the examples of the institution now in existence. As was noted in Chapter II, the primary purpose as seen by all groups concerned was the isthmian one of providing the first two years of work acceptable to colleges and universities, much as the earlier function of our secondary schools was preparation for college. In the junior college the earlier problem has merely been raised to a higher level in our system of education. Anyone who converses much with those connected as administrative heads or as teachers with these units during the first few years of their existence will soon become aware that "making good" with neighboring universities is a matter of compelling concern. And this is doubtless as it should be in these earliest stages.

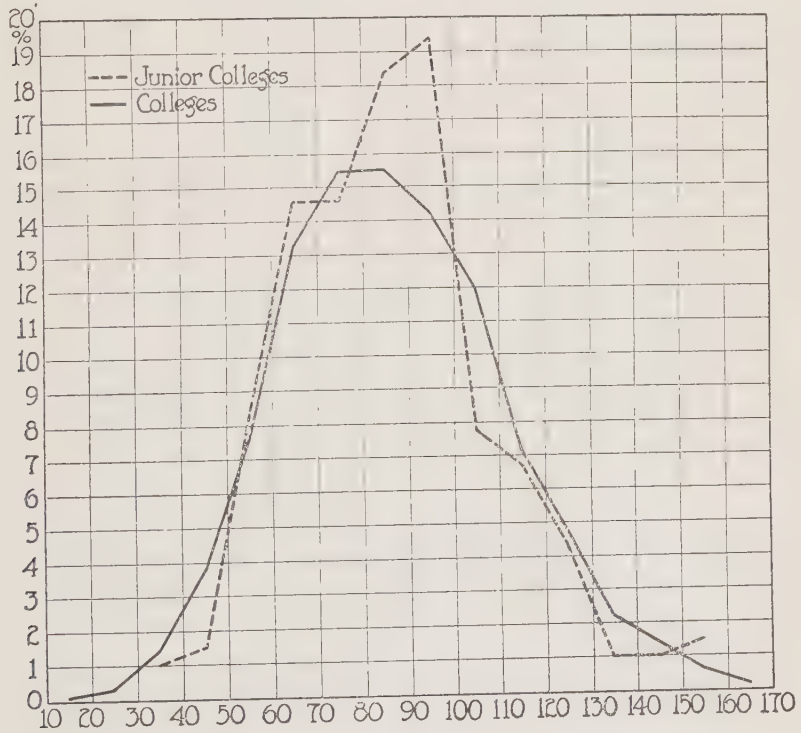

Figure 20

Percentage distributions of scores on the Thurstone Test of 206 freshmen in 5 public junior colleges and of 5495 freshmen in 34 colleges

This dominating conception of the chief function of the junior college during these early stages of development is reflected in the scope of the work open to the prospective student—it is seldom more than that which is prescribed by colleges and universities during the first two years of a four-year period of training. The nature of these prescriptions has already been

made clear. Many of those high school graduates who are mentally on a par with those in the lower portions of the junior college mental distributions have unquestionably considered continuation in the junior college, have weighed the possibility of succeeding in materials with which they have already had discouraging experiences in the high school, and have come to the decision that junior college work was not for them. The writer could cite instances, also, where those in charge of junior colleges take the attitude of discouragement toward those of this group who show signs of wanting to essay junior college work, doubtless either keeping in mind the necessity of safeguarding success in performing the isthmian function, or—which amounts to much the same thing—prompted by the feeling that those only should go on who can make a success of college work.

Viewed from one significant standpoint, the data augur mental democratization of the level of work under consideration through the extension of the junior college movement. This prophecy is to be found in the contrast of distributions in state universities with those in institutions on private foundations, like Oberlin and Yale. A glance at the distributions in the tables will show that the *private institutions are not alone in having considerable numbers of students in the upper reaches* of the Army Alpha Test; the *major difference is that the public institutions dip lower down.* By not being responsible to a public constituency, the strong private higher institution has been in a position to draw a higher selective line. To date, this has been regarded as the right of a private individual or corporation. On the other hand, the two institutions on state foundations are in more than one sense in the position (not rank) of the municipal junior college. In the first place, they serve public constituencies which insist in a more or less definite way upon democratization, and in the second, they are both located in large centers of population which provide no small proportion of the student body. For instance, 388, or 61.5 per cent, of the first 631 freshmen in alphabetical arrangement entering the College of Science, Literature, and the Arts of the University of Minnesota in 1921 had their residence in the Twin Cities or in suburban communities nearby. It would be surprising, indeed, if there were not among these some who, if a mental measure were taken, would be found in the lower portions of the total distribution and who, on account of the proximity of opportunities of higher education at low cost, are willing to essay this higher level of work, when they would hesitate much more to do so if they had to leave the home town to attend. This is perhaps even accentuated when the only passport necessary for admission is a certificate indicating graduation from an accredited high school with a total of sixteen units, only six being prescribed, and these being four units of English and a unit each of algebra and geometry. With the difference in distributions shown between these two types of institutions, we are warranted in anticipating an even greater extent of mental

democratization in junior colleges. It is likely to come much more rapidly after the more democratic purposes of the institution crystallize out of our current inexperience and after work more suited to the capacities under consideration is made available.

IV. Relationship between Army Alpha Scores and Length of Stay in College, Success in Courses Taken, Etc.

An important consideration in any decision as to whether we are in need of an extension of the junior college movement for the sake of democratizing higher education is the degree of success of colleges and universities in providing opportunities for collegiate education to students in the lower portions of the mental distribution. The giving of the Army Tests to large numbers of students in colleges and universities following the termination of hostilities in the late war has afforded the occasion for making studies which inquire into the relationship between the scores on the test and the degree of success of students when measured by their length of stay in school, average marks received, etc. Portions of such a study are reported here, the group of students being those who were freshmen in the College of Science, Literature, and the Arts of the University of Minnesota during the year 1918-19.

The students included.—In January, 1919, after the discontinuance of the S.A.T.C., following the signing of the armistice, the Army Alpha Test was given by Professor Van Wagenen to freshmen in the University. Among those taking the test were an unselected group of 463 freshmen in the College of Science, Literature, and the Arts, 192 of these being men and 271, women. This is a much smaller number than is in this college in normal years, but sufficiently large and sufficiently typical to be of value in making a study of the sort reported here.

The number of students included in the tabulations to be reported was finally reduced from the number above indicated to 344, of whom 123 were men and 221 were women. Those omitted were the following: (1) students who had begun their work prior to the fall of 1918 but who were still classified as freshmen in January, 1919; (2) those who entered the University in January, 1919; and (3) several special cases for whom records were either incomplete or who were for some reason not comparable with the rest of the group.

The grouping.—On the sheets containing the names and the original individual scores to which the present writer had access through the kindness of Professor Van Wagenen, there was also for each student a figure indicating the P. E. distance of his score from the median of all the 463 freshmen who took the tests. These distances, and not the scores, were utilized to distribute the students to the low, middle, and high groups to be found in Table XXXVIII. In the low group are placed all those students

with scores giving them P. E. distances between -4.5 and -1.6; in the middle group, all those between -1.5 and 1.4; in the high group, all those between 1.5 and 4.4. This division places most students in the middle group, but it also leaves numbers sufficiently large to give meaning to the study of the low and high groups. Besides showing the numbers and percentages of students, this table presents the ranges of scores for each group as well as the median scores. It is to be read as follows: 26 of the 123 men included in the study, or 21.1 per cent, were in the low group. Their scores on the Army Alpha Test ranged from 61 to 102, while the median score of this group of 26 students was 92. The distribution of the scores and the groupings here made may be seen in Figure 27.

TABLE XXXVIII

NUMBERS AND PER CENTS OF FRESHMEN IN THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS OF THE UNIVERSITY OF MINNESOTA IN THE LOW, MIDDLE, AND HIGH GROUPS WITH RANGES OF ARMY ALPHA SCORES AND MEDIANS

GROUP	MEN				WOMEN				TOTAL			
	No.	Per Cent	Range of Alpha Scores	Median Score	No.	Per Cent	Range of Alpha Scores	Median Score	No.	Per Cent	Range of Alpha Scores	Median Score
Low	26	21.1	61–102	92	32	14.5	62 –102	96	58	16.9	61 –102	95
Middle ..	88	71.5	103–157	135	158	71.5	103 –157	131	246	71.5	103 –157	132
High ...	9	7.3	159–194	166	31	14.0	153[a]–184	169	40	11.6	153[a]–194	168
TOTALS	123	99.9	61–194	132	221	100.0	62 –184	131	344	100.0	61 –194	131

[a] Through error a single case of a score of 153 was misplaced in the high group, i.e., five points above its proper location, throughout the tabulations to follow. Except for this case the range of the high group of women is 158 to 184, and of the total high group, 158 to 194. This displacement of a single case can have scarcely more than an inappreciable effect upon the findings to be presented.

The mental level and the length of stay in the University.—The first aspect of this portion of the study is a scrutiny of the relationship between the mental grouping shown in Table XXXVIII and the length of stay in the University. Before making the interpretations of Table XXXIX (see also Figure 21) which presents the results of an effort to discover any such relationship, it will be necessary to explain that this length of stay for each student was measured in number of quarters. A quarter ranges from eleven to twelve school weeks in length, there being three quarters in each academic year. A small proportion of the students included in the study attended during summer sessions also, these being six weeks in length. During the compilation of some of the data from the students' records in the registrar's office, the person assisting proceeded on the incorrect assumption that the summer session was of equal length with a quarter during the regular year. The error was discovered before completion of the compilations and in all

subsequent instances attendance during the summer was recorded as the equivalent of a half-quarter's residence. The number of instances of incorrect interpretation of this sort is too small to affect in any vital way the results as presented. As the study here reported was made during the summer of 1921, and as the data concern freshmen entering in the fall of 1918, the maximum period of residence possible, including two summer sessions, is ten quarters. The maximum for almost all students would, however, be nine quarters, owing to the relative infrequency with which underclassmen attend summer sessions.

TABLE XXXIX

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS REMAINING THREE QUARTERS OR LESS, SIX QUARTERS OR LESS, AND NINE QUARTERS

GROUP	PER CENT OF MEN REMAINING			PER CENT OF WOMEN REMAINING			PER CENT OF ALL STUDENTS REMAINING		
	Three Quarters or Less	Six Quarters or Less	Nine Quarters	Three Quarters or Less	Six Quarters or Less	Nine Quarters	Three Quarters or Less	Six Quarters or Less	Nine Quarters
Low	23.1	42.3	38.5	21.9	53.1	28.1	22.6	48.3	32.7
Middle	8.0	26.2	48.8	15.8	35.3	51.9	13.3	32.3	50.8
High	11.1	11.1	55.6	16.3	35.8	48.2	15.0	32.5	50.0

The table (XXXIX) is to be read as follows: 23.1 per cent of the men whose test scores placed them in the low group remained in attendance three quarters or less, 42.3 per cent remained six quarters or less, while 38.5 per cent remained the full period of nine quarters (three academic years). Corresponding measures for the middle group show, as is to be expected, smaller groups remaining through three quarters or less and six quarters or less, and a larger percentage remaining throughout nine quarters. The high group of men is small, but it bears out roughly what we are led to expect from a comparison of the percentages for the low and middle groups. The situations for women and for all students are not essentially different from that for men. The main fact disclosed is that *much larger percentages of those in the low group are eliminated than of either of the other two groups.*

Colvin came to similar conclusions in a study of a similar sort concerning students at Brown University. He said,

> The tendency to eliminate the less intelligent students is indicated when we inspect the record of the Class of 1922. In this class, 334 men took the Brown tests. Of these, 115 had left college by the end of their Sophomore year. Of those leaving, 14 per cent stood high in their psychological tests; 41 per cent received average scores; and 45 per cent low scores. . . . Substantially the same results are found in connection with the Army tests.[8]

[8] Stephen S. Colvin, The Use of Intelligence Tests. *Educational Review* 62: 134-35. September, 1921.

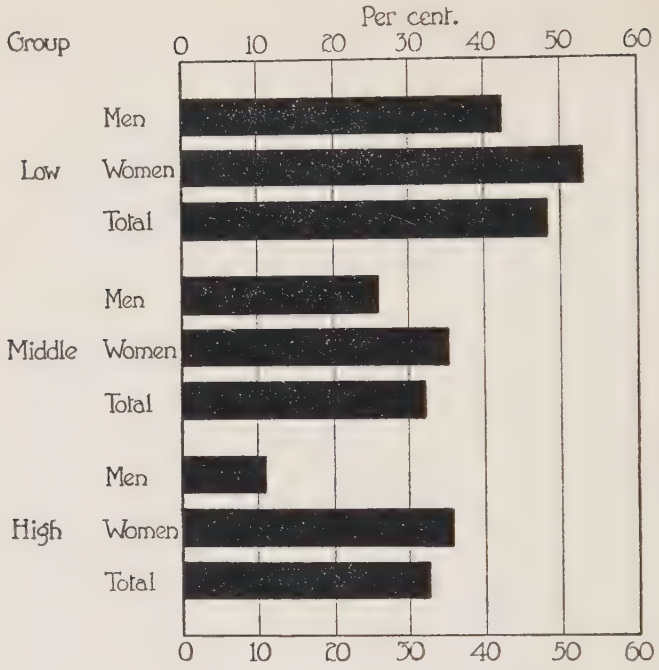

Figure 21

Percentages of students in low, middle, and high groups remaining six quarters or less

The mental levels and the average marks.—The next table (XL) is presented to show the relationship between the mental grouping and the success as measured by the average of the marks earned by each student. To make apparent its significance it is necessary to point out that a literal system of marking is used in the University of Minnesota, extending from A as the highest to F as the lowest. In this system, D is the lowest mark for which credit is given, E is a conditional mark, and F indicates failure. The numerical equivalents assigned to these letters throughout this section are, from the top down, respectively, 95, 85, 75, 65, 55, and 45. To give courses bearing different amounts of credit their due weight, the method followed was to multiply the numerical equivalent of the letter by the number of credits; e.g., an A in a 3-credit course would have the value of three times 95, or 285. The values were then added and divided by the total number of credits covered by the courses for which a student had received marks, the quotient being his average grade.

One other detail of statistical procedure requires explanation. Among the marks sometimes reported by instructors is I for "Incompletes." In this study the practice, to a slight extent inadvisable, was followed of assigning to each I found the same numerical equivalent as an E, i.e., 55. The reader will probably sense the unjustifiability of such a practice, although the procedure is not without some grounds for support to be found in the fact that this mark is more commonly reported for the less competent than for the more competent student. With a view to ascertaining the possible extent of influence of this procedure the number of incompletes reported for two groups of men and two groups of women was obtained and these studied in relation to the average grade earned by each student. For instance, for the thirty-two women in the low group there were reported seven "Incompletes." The average marks of the six students receiving these were 65.4, 73.0, 74.5, 68.5, 70.8, and 63.8, the average of these marks being 69.3. This is an average of D, only a step above the E, of which the I was regarded as the equivalent. As these seven incompletes were the only ones appearing in a total of 513 courses taken by these thirty-two women, the misrepresentative influence must be small indeed. For fifty-six women in the middle group, who had taken a total of over a thousand courses, there were only six incompletes, and these were given to four students whose average marks were 71.2, 76.9, 69.1, and 78.5. The average of these four average grades lies between C and D. Here any possible total effect would be even less than in the preceding instance.

TABLE XL

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS WHOSE AVERAGES OF MARKS ARE BELOW THE LOWEST CREDIT LEVEL

GROUP	MEN	WOMEN	TOTAL
Low	46.1	21.8	32.7
Middle	26.1	10.1	15.8
High	22.2	3.2	7.5

The table (XL) presenting the comparison of the three groups as to the average marks earned shows that 46.1 per cent, or almost a half of the men in the low group, have average marks below the lowest credit level (D, or 65). The situation for women is not as bad, but is far from gratifying, while that for all the students shows approximately a third receiving average grades below the passing level. Even in the middle and high groups considerable proportions of students are found to be similarly unsuccessful.

If there is much special effort in a higher institution of this sort to look out for the progress and retention of the student in the lower end of the distributions shown, it does not make itself apparent in findings of this sort.

The mental levels and credits earned.—The percentages of students in the low, middle, and high groups, who earned during their periods of attendance—however short or long these were— less than forty or less than eighty quarter credits,[9] are presented in Table XLI. As many as 42.2 per cent of the men in the low group are seen to have earned less than forty credits, while only 13.7 per cent of the middle group make such a poor showing. The figures for women, although not flattering, are not as discouraging. Almost thirty per cent of all the students in the low group earned less than forty credits.

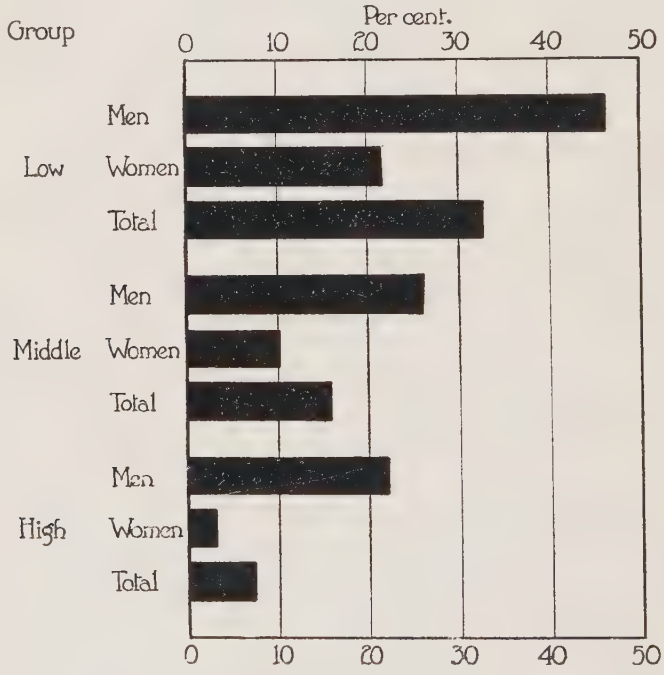

Figure 22

Percentages of students in low, middle, and high groups whose averages of marks are below the lowest credit level

Another approach to a study of the amount of credit earned appears in Table XLII, which gives the percentages of students in the three mental groups who earned less than nine, twelve, and fifteen credits per quarter during their periods of residence. Bearing in mind that the usual amount a student expects to earn is fifteen or sixteen credits, it may be seen that large proportions of men, women, and all students earn less than twelve, or even as low a number of credits as nine.

[9] One quarter credit is given for each hour of class work per week throughout a quarter.

TABLE XLI

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS WHO EARNED LESS THAN FORTY AND LESS THAN EIGHTY QUARTER CREDITS

GROUP	MEN		WOMEN		TOTAL	
	Less than 40	Less than 80	Less than 40	Less than 80	Less than 40	Less than 80
Low	42.2	49.9	18.7	53.1	29.3	51.7
Middle	13.7	28.4	8.3	27.9	10.2	28.1
High	11.1	44.5	6.4	22.5	7.5	27.5

Recalling what has already been reported above, we can say that *students in the low group are neither encouraged to stay long in the University nor permitted to pile up much in the way of credit while there.*

Mental levels and honor points earned.—But what has so far been shown is only a partial account of the situation. More appears when a study is made of the relation between the mental level of the student and the likelihood of his accumulating any large number of "honor points" during a period of residence of a year or two.

TABLE XLII

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS WHO EARNED LESS THAN NINE, TWELVE, AND FIFTEEN CREDITS PER QUARTER OF RESIDENCE

GROUP	PER CENT OF MEN EARNING LESS THAN			PER CENT OF WOMEN EARNING LESS THAN			PER CENT OF ALL STUDENTS EARNING LESS THAN		
	Nine Credits	Twelve Credits	Fifteen Credits	Nine Credits	Twelve Credits	Fifteen Credits	Nine Credits	Twelve Credits	Fifteen Credits
Low	15.4	45.1	87.3	6.2	18.7	65.5	10.3	31.0	75.7
Middle	1.1	17.0	64.4	1.3	10.1	65.5	1.2	12.6	65.4
High	...	33.3	66.7	...	6.4	41.9	...	12.5	47.5

These honor points are obtained by receiving marks higher than D, which is the lowest passing grade. For each hour of credit for which a student receives a mark of C, he receives one honor point; of B, two honor points; of A, three honor points. If he receives marks of C in all his work in a quarter in which he carries fifteen hours, he receives fifteen honor points, if B, thirty honor points; if A, forty-five honor points. No honor points are assigned to marks lower than C. Advancement from the Junior to the Senior College in the College of Science, Literature, and the Arts, is contingent upon the student's earning ninety credits and ninety honor points. In effect, then, the student to be advanced to the upper unit, must receive an average grade of C—not merely a passing grade of D— in an average of fifteen credits per quarter for six quarters.

TABLE XLIII

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS WITH AVERAGES OF MARKS BELOW THE HONOR POINT LEVEL

GROUP	MEN	WOMEN	TOTAL
Low	84.5	84.2	84.3
Middle	57.7	51.0	53.6
High	66.6	22.6	32.5

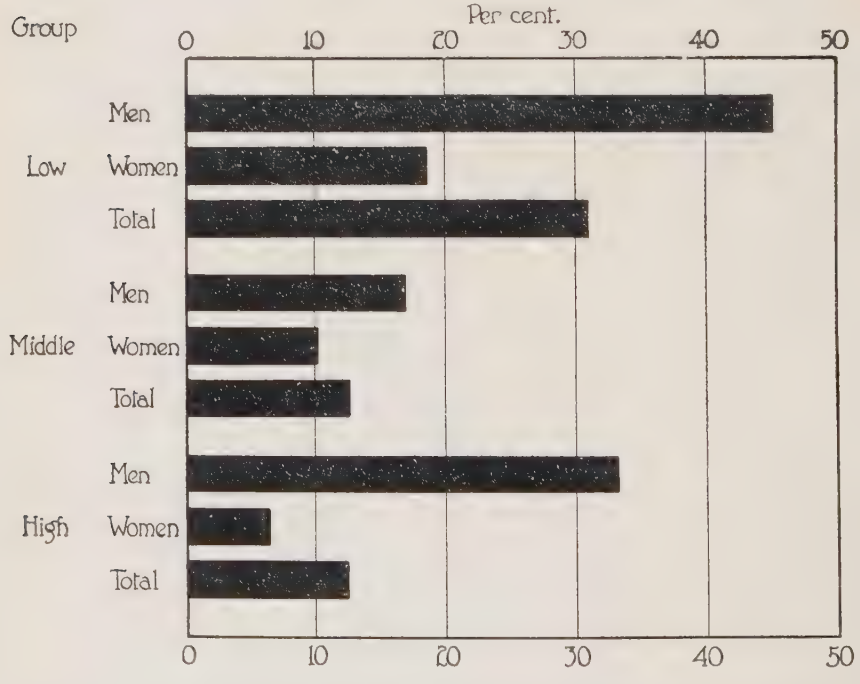

Figure 23

Percentages of students in low, middle, and high groups earning less than twelve credits per quarter of residence

The next table (XLIII) makes clear that the student in the low group has practically no chance of advancement to the upper unit in the college, as 84.5 per cent of the men and 84.2 per cent of the women in this group received marks in all their work which placed their averages below the honor point level. This plan seems not even suited to the needs of the middle group constituting the great bulk of the student body, since more than half of these do not attain an average mark that brings honor points with it.

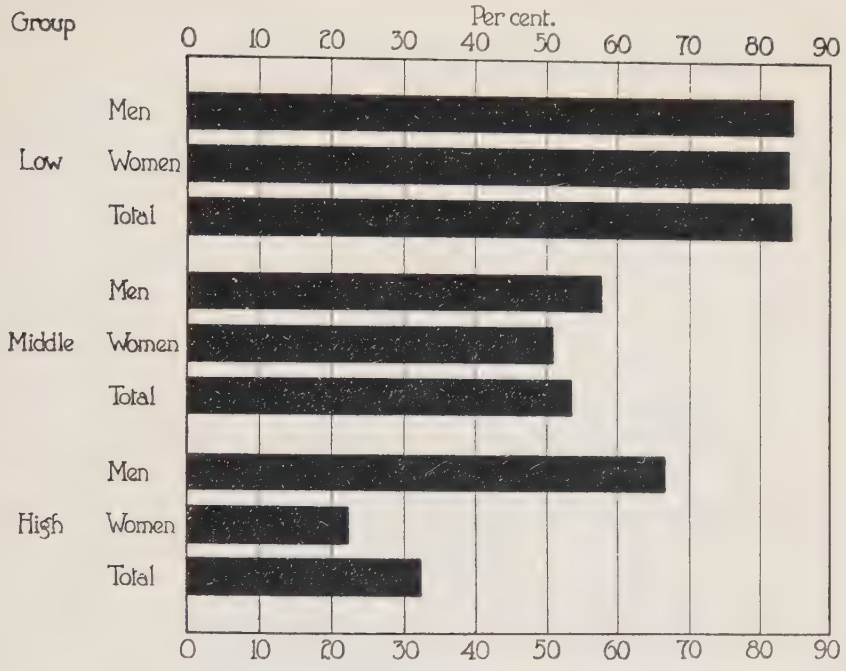

Figure 24

Percentages of students in low, middle, and high groups with averages of marks below the honor point level

Two additional descriptions of the honor point situation are afforded in Tables XLIV and XLV. The former of these presents the percentages of each of the three groups earning less than fifty and less than one hundred honor points, irrespective of the period of attendance, and makes clear that the student in the low group achieves progress against great odds. The latter takes into consideration the period of residence, setting forth the percentage of each of the three groups earning five honor points or less per quarter, ten honor points or less, and fifteen honor points or less. The main finding of this table furnishes corroboration for the materials previously presented and points to the same conclusion, that *the plan looks toward the selection of students of superior quality for work on the upper level, rather than toward training of the student in terms of his capacity on the level in which he is enrolled.*

TABLE XLIV

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS EARNING LESS THAN FIFTY AND LESS THAN ONE HUNDRED HONOR POINTS

GROUP	PER CENT OF MEN EARNING LESS THAN		PER CENT OF WOMEN EARNING LESS THAN		PER CENT OF ALL STUDENTS EARNING LESS THAN	
	HONOR POINTS		HONOR POINTS		HONOR POINTS	
	Fifty	One hundred	Fifty	One hundred	Fifty	One hundred
Low	53.8	73.0	40.6	68.7	46.5	70.6
Middle	24.9	45.4	20.9	42.4	22.3	43.4
High	37.5	50.0	12.9	29.0	17.5	32.5

TABLE XLV

PERCENTAGES OF STUDENTS IN LOW, MIDDLE, AND HIGH GROUPS EARNING LESS THAN FIVE, TEN, AND FIFTEEN HONOR POINTS PER QUARTER OF RESIDENCE

GROUP	PER CENT OF MEN EARNING LESS THAN			PER CENT OF WOMEN EARNING LESS THAN			PER CENT OF ALL STUDENTS EARNING LESS THAN		
	HONOR POINTS			HONOR POINTS			HONOR POINTS		
	Five	Ten	Fifteen	Five	Ten	Fifteen	Five	Ten	Fifteen
Low	38.5	65.5	80.9	21.8	49.9	84.2	29.2	56.8	83.2
Middle	15.7	35.8	59.4	11.3	22.7	48.1	12.8	27.2	52.4
High	22.2	44.4	55.5	...	12.9	22.5	5.0	20.0	30.0

The work taken by eliminated students.—That the University functions primarily for those who can go on and not for the group less well fitted or less inclined to proceed with the work on the senior college level is made manifest in the next table (XLVI) which shows the subject groups represented in the work taken by the thirty-two men and sixty-one women (of this total of 344 students) who left the University sometime between the end of their second quarter of residence and the beginning of what would have been their third year in the University—a total of ninety-three students who did not remain beyond what we regard as the junior college period of education. While doubtless some of these materials, perhaps even most of them, may be looked upon as appropriate for the education of students not going on, others are of little value for terminal training. Such would be the work in foreign language, usually French or Spanish of an elementary sort, or mathematics. The former was taken in greater or less amount by almost all those who dropped out—by eighty-five per cent of the total number, in fact.

Mathematics was taken by two thirds of the men, but by a smaller proportion of the women. The taking of work in both of these subject groups, especially the particular courses pursued by the students under consideration, assumes subsequent work in the same or closely related lines. They are in effect, when taken by a student who does not proceed as is assumed, lower portions of a truncated curriculum, not the culminal portions of a shorter period of education better suited to the needs of those eliminated. This is remote from "rounding out" the education of students not going on.

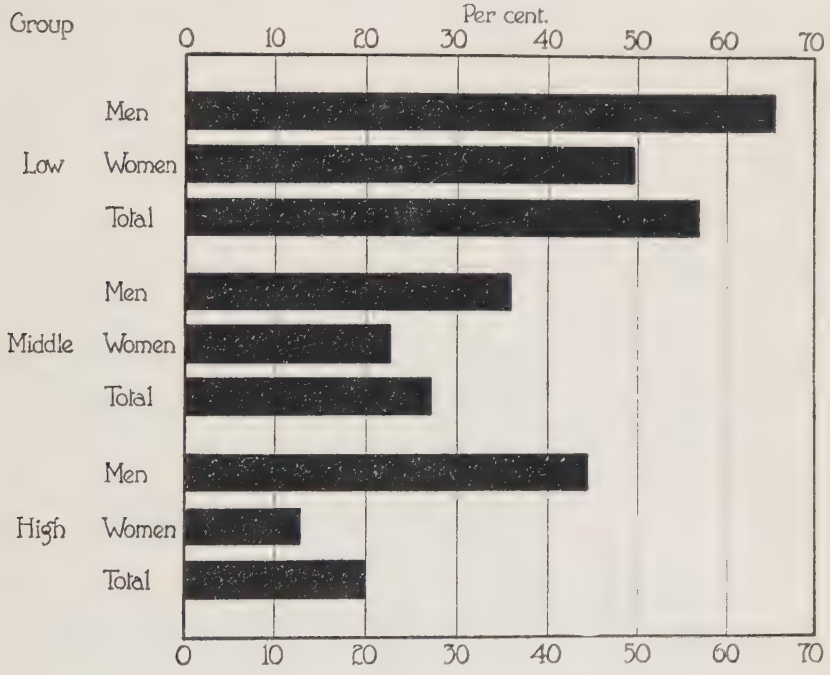

Figure 25

Percentages of students in low, middle, and high groups earning less than 10 honor points per quarter of residence

It is perhaps gratuitous to restate in this connection that there are among these eliminated students some whose Army Test scores were in the middle and high groups as here classified. The proportions are, however, much smaller than for the low group. Notwithstanding their superiority, the inappositeness of the materials of a truncated curriculum are hardly less conspicuous.

This situation not restricted to a single institution.—These materials would not have been presented were there any misgiving that they are not more or less representative of stronger colleges and universities generally.

The sifting process may differ in detail, but elimination and discouragement of those in the lower mental ranges who gain admission would be found in any wide study to be nearly universal.

TABLE XLVI

NUMBERS AND PERCENTAGES OF ELIMINATED STUDENTS TAKING COURSES IN CERTAIN SUBJECT GROUPS

SUBJECT GROUP	MEN (32)		WOMEN (61)		ALL ELIMINATED	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
English and rhetoric	29	91	59	97	88	95
Foreign language	24	75	55	90	79	85
Mathematics	21	66	16	26	37	30
Science	23	72	52	85	75	81
Psychology and philosophy	8	25	19	31	27	29
Social subjects	27	84	59	97	86	92

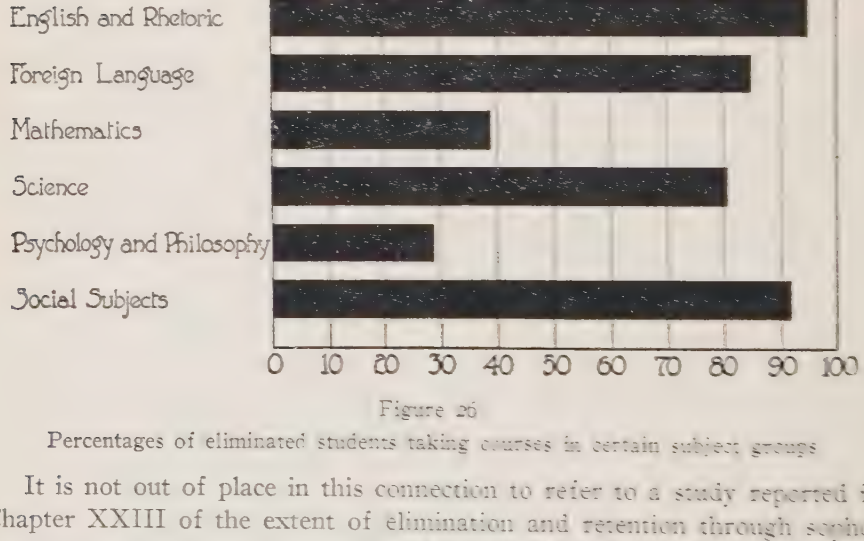

Figure 26

Percentages of eliminated students taking courses in certain subject groups

It is not out of place in this connection to refer to a study reported in Chapter XXIII of the extent of elimination and retention through sophomore, junior, and senior years, of students enrolling as freshmen in standard higher institutions. In brief, this study indicates that in mid-western colleges at least, only approximately a half of these freshmen return for a third year of work. As relatively few transfer to other institutions, this large proportion of students is, like the eliminates of the University of Minnesota, pursuing what is for them an unfinished education. Certainly, when the proportion of those eliminated mounts to such significant proportions,

it is high time to give consideration to the kinds of materials in their curricula.

College freshmen and the literate white draft compared.—Having revealed something (1) of the range and distribution of mentality represented in higher institutions and (2) of the relationship of the level of mentality to length of residence and to the degree of success, it is now pertinent at least to suggest the magnitude of the task higher education has yet before it, if it is to provide opportunities of training for anything like *all* of those who, according to our democratic assumptions, are entitled to it and can be expected to profit by it. It is not impossible to accomplish this in brief space, especially as the Army Alpha Test, results of the use of which on college and university students have been utilized in this study, was first put in use by the United States Army on large numbers of the draft in operation during the late war. The means used, is a comparison of the distribution of scores obtained by the 344 freshmen in the College of Science, Literature, and the Arts of the University of Minnesota used in the portion of the study just reported with that of 51,620 men in the white draft who are all those men from the 100,000 native born "who took alpha only, or alpha and beta only, alpha and an individual examination, or alpha, beta, and an individual examination."[10] In other words all took the Alpha Test, so we know that they were all literate. The distribution does not adequately represent all the literate, white, native-born men of the nation, because many of the most intelligent of those men had already entered the army as officers or as officer candidates. This fact can detract little from the significance of the comparison presented in Table XLVII and Figure 27.

The distributions display a striking contrast. They show, in so far as both are representative, respectively, of college freshmen and of the literate portions of our white population, that college students are drawn almost exclusively from the upper reaches of the total mental distribution. Put in approximate numerical terms, the comparison shows that more than nine tenths of the former group come from the upper fifth of the latter. On the other hand, less than a tenth come from all the remaining four fifths.

If it is conceded from practical considerations that even only those in the total population who now have *some* representation in the college group have a right to some extent and some kind of education above high school level, it can be demonstrated that the task of providing this higher education has been barely begun. Thus, those of the low group of freshmen in the University of Minnesota upon whom attention has been centered in this section of the study, with scores ranging from 61 to 102, constitute but

[10] *Memoirs of the National Academy of Sciences*, 1921. Vol. XV. p. 750. The percentage distribution is taken from p. 764. Further description is provided on pp. 553-59.

16.9 per cent[11] of this group of students, whereas this range of scores includes approximately a third of the army distribution. It should be noted, also, that all the individuals in the latter group are well above the median score of the total white draft, which is shown in Table XLVII to be 58.9.

TABLE XLVII

PERCENTAGE DISTRIBUTIONS OF ALPHA SCORES OF 344 FRESHMEN IN THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS OF THE UNIVERSITY OF MINNESOTA AND OF 51,620 MEN IN THE WHITE ARMY DRAFT

SCORES	PER CENT OF FRESHMEN	PER CENT OF WHITE DRAFT	SCORES	PER CENT OF FRESHMEN	PER CENT OF WHITE DRAFT
0- 4	...	1.0	100-104	4.4	2.5
5- 9	...	2.2	105-109	7.3	2.3
10-14	...	3.0	110-114	4.1	2.1
15-19	...	4.0	115-119	5.8	1.8
20-24	...	4.4	120-124	4.9	1.4
25-29	...	4.9	125-129	8.1	1.4
30-34	...	5.3	130-134	7.6	1.3
35-39	...	5.3	135-139	7.0	1.0
40-44	...	5.3	140-144	9.9	0.8
45-49	...	5.4	145-149	6.1	0.8
50-54	...	5.1	150-154	7.3	0.7
55-59	...	5.2	155-159	4.4	0.5
60-64	0.5	4.9	160-164	3.2	0.4
65-69	1.2	4.4	165-169	1.4	0.3
70-74	0.3	4.4	170-174	1.7	0.3
75-79	1.2	3.9	175-179	1.7	0.2
80-84	0.9	3.6	180-184	1.2	0.1
85-89	2.0	3.4	185-189	...	0.1
90-94	1.7	3.2	190-194	0.3	...
95-99	5.5	2.9	...-...	...	...
TOTAL				100.1	99.8
MEDIAN				131.2	58.9

The last contrast of figures is, of course, far from the same thing as stating that 16.9 per cent of all the 30 per cent, let us say, of our white literate population of appropriate ages are enjoying the opportunities of some extent of higher education. An estimate along these lines that would be dependable would be difficult to make. But when it is remembered that few, if any, of the students of this range of mentality obtain entrance to some of our stronger institutions, and that, in most of the others to which they are admitted, they are soon discouraged by the sifting process well-nigh universal, the educational opportunities for them, except as provided in the high schools, which many of them have completed and increasing proportions will complete, may be judged to be almost totally absent. In the

[11] See Table XXXVIII.

face of the rising tide of education, elsewhere shown to be affecting larger and larger proportions of the population, present facilities in standard colleges and universities strike one as distressingly ineffectual.

The solution of the problem.—In this situation, neither the American ideal of democratic education nor the scholastic ideals of standard colleges and universities seem likely soon to give way. It would require some gigantic force now undiscernible to wrench from us our conviction that we must attain both mental and financial democratization of educational opportunities to a much larger extent than now obtains. In consequence, the tide is almost certain to continue to rise and the opportunities to reach down increasingly to the mental levels we have seen to be now relatively untouched.

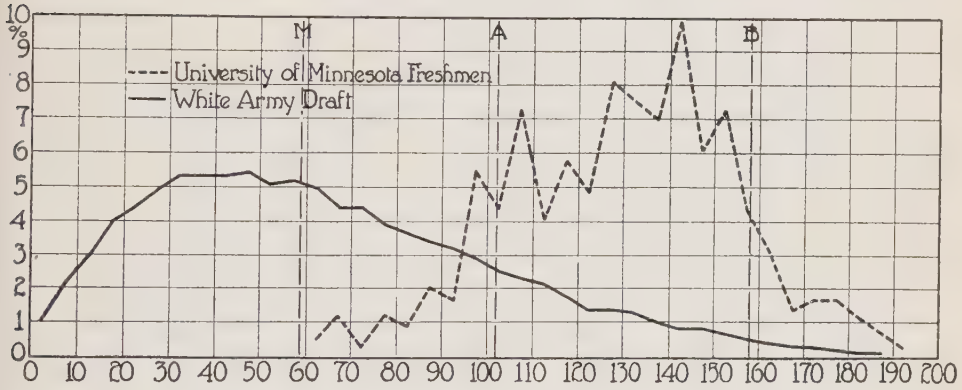

Figure 27

Percentage distributions of Alpha scores of 344 freshmen in the College of Science, Literature, and the Arts of the University of Minnesota and of 51,620 men in the white army draft (Lines A and B divide the middle group of Minnesota freshmen from the low group at the left and the high group at the right. Line M indicates the median of the white army draft.)

On the other hand, the sifting process seems almost inherent in our present college and university system and is not without important considerations to recommend it. It is in the nature of these institutions offering periods of training four or more years in length to administer requirements in terms of their full duration, whether these are of particular courses prescribed or of quantity and quality of work to be done. A host of their traditions has grown out of the contemplation of the completion of a full four-year course, or more. Pressed with this flood of "inferior" candidates for higher education, many of whom, although deserving some extent of opportunity beyond the present high school level, are not warranted in aspiring to a full traditional college or university course, they have proceeded

to protect the longer courses against the inundation by one or another process of selection. Many of the private and some of the public institutions have set up barriers at entrance, e.g., the plan of accepting only candidates whose high school averages place them in the upper two thirds of their classes, the requirement of passing a rigid entrance examination, or the prescription for admission of large numbers of units in subjects of high selective value, such as ancient languages and mathematics. These have often been justified by absence of facilities for taking care of larger numbers of students. Others, more of them subject to public than to private control, not being in a position to bar such students at entrance, set up more or less elaborate, but effective devices of sifting to which the students are subjected *after* entrance. Still other institutions operate two types of selection, one previous to, the other subsequent to, admission.

Viewed from this standpoint of success in courses four or more years in length, these plans of exclusion are not open to unqualified condemnation. It is when attention centers around the broader service which must be rendered those who are now being excluded that the unendurableness of such plans becomes conspicuous. However, their universality and their compatibility with long course traditions assure us that they are almost as unlikely soon to disappear as is our general acceptance of the concept of a democratic higher education. In consequence, without reorganization it must be long indeed before mental democratization can be achieved. The hope must rest, *not in readjustments within colleges and universities of the current type, but in institutions in which the first two years under consideration are terminal grades.* That is to say, it rests in the utilization of the junior college idea. Our assurance that the interests of those who will not or should not go beyond first and second college years will be better conserved in such an institution than in their present location is grounded in the fact that the lower schools with which this work should be associated have already made propitious beginnings toward differentiating work for those who can and should, and for those who cannot or should not, continue their education.

CHAPTER VII

THE JUNIOR COLLEGE AND ECONOMIC DEMOCRATIZATION OF HIGHER EDUCATION

I. The Claim Made for the Junior College and How Examined

It was shown in Chapter II that large proportions of the literature dealing with the junior college and of the catalogues of public junior colleges contend that the new unit is designed to popularize higher education. This popularization is to be accomplished, say the friends of the new unit, through the influence of lowered costs and of sheer proximity of opportunities for the first two years of curricula of higher schools. Notwithstanding the strong presumption in favor of the claim as made, it is desirable to inquire into it in order (1) the more certainly to establish or disestablish it, (2) to note the *degree* of its validity, (3) to evaluate the two main types of junior colleges on this basis, and (4) to lay a partial basis for policies to be pursued in junior college developments of the future.

The lines of inquiry upon which report is to be made in subsequent sections of the current chapter are (a) the parents' justification of the movement, in order to see what consideration in support of the junior college looms most prominently in their minds, (b) the proportionate acknowledgement of ability or inability to attend elsewhere of students living at home while in attendance, (c) the annual cost of attendance in the several types of higher institution both for students living at home and for those living away from home, (d) the extent of popularization through propinquity of opportunities for higher education, and (e) the occupational distribution of the fathers of students in secondary and higher institutions, including junior colleges.

II. Parents' Justification of the Movement

The method of making inquiry of parents.—One body of material assembled for the investigation of the junior college movement which has some relevancy for the problem in hand came from parents of junior college students in response to a question put to them. The question was simply why the son or daughter concerned was attending the local junior college rather than a college or university elsewhere. The simple blank of inquiry upon which this question was printed was taken home by students of certain of the public junior colleges which were visited by the investigator. It was accompanied by a request to respond briefly and to return the blank to the investigator in a stamped addressed envelope sent with the sheet of inquiry. Upwards of 600 blanks were distributed to students, and a total of

199 were returned to the writer, coming from parents of students in four junior colleges in Minnesota, one in Michigan, one in Texas, and three in California. This number is sufficiently large to be representative. A total of 423 reasons was presented in these 199 responses.

The digest of the returns.—The results of analysis of the responses made by parents is given in Table XLVIII and Figure 28. It may be seen that four reasons are given with much greater frequency than others. Of these, Number 2, *home influences extended* and Number 4, *more attention to the individual student,* have no relevancy to the immediate problem and further reference to them will be deferred to Chapters IX and X, respectively.

TABLE XLVIII

FREQUENCY OF APPEARANCE OF REASONS GIVEN BY PARENTS FOR THE ATTENDANCE OF SONS AND DAUGHTERS AT LOCAL JUNIOR COLLEGES

REASONS	MIDDLE WEST[a]		CALIFORNIA		TOTALS	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1. Attendance at junior college less expensive	110	37.0	33	26.2	143	33.8
2. Home influence extended	82	27.6	36	28.5	118	27.9
3. Training received as good or better	48	16.2	15	11.9	63	14.9
4. More attention to individual	28	9.4	19	15.1	47	11.1
5. Preference of student	5	1.7	2	1.6	7	1.7
6. Duty to patronize local junior college	3	1.0	3	2.4	6	1.4
7. Gap between high school and college bridged	...	...	5	4.0	5	1.2
8. Student needed at home	5	1.7	...	...	5	1.2
9. General and miscellaneous	16	5.4	13	10.3	29	6.9
TOTALS	297	100.0	126	100.0	423	100.1

[a] Includes 16 responses from parents in El Paso, Texas.

Reason Number 1, *attendance at junior college less expensive,* may be judged to have intimate meaning for the problem of economic democratization of higher education. It is, as may be seen in the table and figure, the type of reason offered more frequently than any other, being given in a total of 143 of the responses. It thus includes more than a third of all the 423 reasons given. Another way of calling attention to the extent to which it looms in the minds of parents is to say that it is found in almost three fourths of the 199 responses made. It is interesting to note that it is not the most frequent reason given in the group of California responses, taking a position there slightly subordinate to Number 2, *home influences extended.*

A fact not shown in the table or figure is the large proportion of parents whose answers were grouped under Number 1 who state frankly that they "cannot afford" to send the son or daughter to a college or university elsewhere. This includes thirty-eight parents in the mid-western group, which is more than a fourth of all answering the question. The proportion would doubtless be even greater if all those who meant "cannot afford" when they reported "less expensive" had said so.

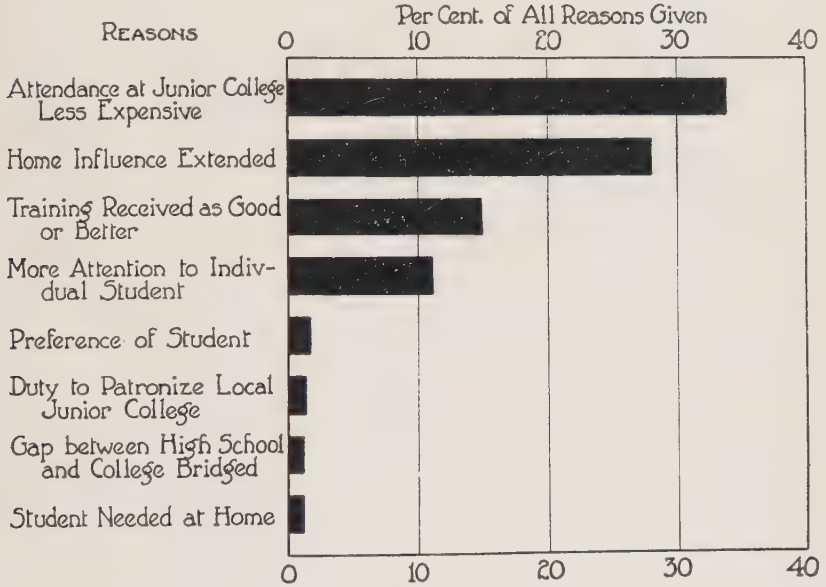

Figure 28

Percentage frequency of appearance of reasons given by parents for the attendance of sons and daughters at local junior colleges

Reason Number 3, in so far as parents refer to the equality of instruction in junior colleges with that elsewhere—which is their almost universal practice in the reasons tabulated under this head—immediately implies some additional reason. Without doubt this is in some instances Number 1, although it also must involve certain others, like Numbers 2 and 4.

III. Ability To Go Elsewhere of Students Living at Home while in Attendance

The question and to whom put.—One source of information in this investigation was a blank filled out by students themselves. Much of the data supplied constitute the basis of the subsequent portions of the current chapter. A question in the blank which only students who were living at home were asked to answer was, "Could you go to college if you had to

live away from home?" The same questionnaire was filled out by students in public junior colleges, private junior colleges, institutions of the separate college type, and a state university. Only sophomores in the standard higher institutions were approached for the required information, but in the junior colleges the request was made irrespective of classification as freshmen or sophomores.

TABLE XLIX

NUMBERS AND PERCENTAGES OF STUDENTS LIVING AT HOME WHILE IN ATTENDANCE WHO ANSWERED "YES," "NO," OR "DOUBTFUL" TO THE QUESTION, "COULD YOU GO TO COLLEGE IF YOU HAD TO LIVE AWAY FROM HOME?"

TYPE OF INSTITUTION	TYPE OF RESPONSE	MEN		WOMEN		TOTAL	
		Number	Per Cent	Number	Per Cent	Number	Per Cent
Sixteen public junior colleges	Yes	282	67.1	285	64.2	567	65.6
	No	30	7.1	49	11.0	79	9.1
	Doubtful	108	25.7	110	24.8	218	25.2
	No and doubtful	138	32.9	159	35.8	297	34.4
	Total	420	100.0	444	100.0	864	100.0
Eight private junior colleges	Yes	8	44.4	29	70.7	37	62.7
	No	4	22.2	7	17.1	11	18.6
	Doubtful	6	33.3	5	12.2	11	18.6
	No and doubtful	10	55.6	12	29.3	22	37.3
	Total	18	100.0	41	100.0	59	100.0
Three colleges and a state university	Yes	26	56.5	22	46.8	48	51.6
	No	6	13.0	5	10.6	11	11.8
	Doubtful	14	30.4	20	42.6	34	36.6
	No and doubtful	20	43.5	25	53.2	45	48.4
	Total	46	100.0	47	100.0	93	100.0
All students at home (twenty-eight institutions)	Yes	316	65.3	336	63.2	652	64.2
	No	40	8.3	61	11.5	101	9.9
	Doubtful	128	26.4	135	25.4	263	25.9
	No and doubtful	168	34.7	196	36.8	364	35.8
	Total	484	100.0	532	100.0	1016	100.0

The responses.—A total of more than 2000 students responded to the questionnaire. Of these 1137 were living at home while attending, and of this number 1016 answered the question quoted by responses equivalent to "Yes," "No," or "Doubtful." Almost a half of the answers—47.6 per cent, to be exact—were made by men, and 52.4 per cent by women. Because of the number of students appealed to in each type of institution and because

of the differing proportions for each type which local students are of the total enrolments, the number of responses as shown in Table XLIX is much larger for public junior colleges than for either of the other groups of institutions, being 864 in the total of 1016 already referred to.

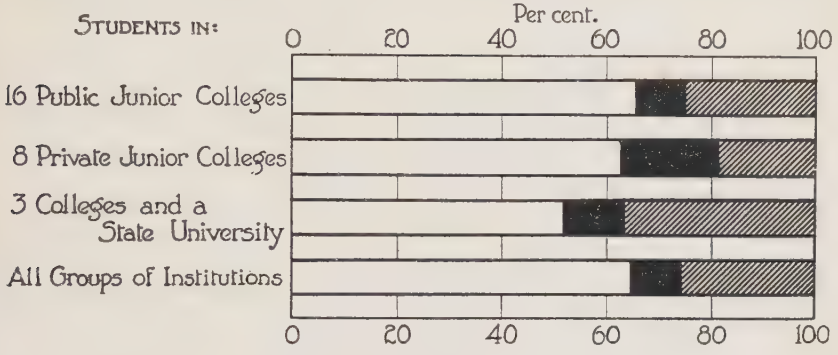

Figure 29

Percentages of students living at home while in attendance who answered "Yes," "No," or "Doubtful" to the question, "Could you go to college if you had to live away from home?" (in outline, yes; black, no; hatching, doubtful)

The significant fact is the large proportions of students who would be certain or likely to be deprived of the opportunity of college education if required to attend away from home. For practical purposes the "noes" and the "doubtfuls" may be considered as a single group. The percentages of these in all three groups run high, in none dropping below a third of those answering the question (see also Figure 29). In the case of the third group, sophomores in three colleges and a state university, it mounts to almost a half of those living at home while in attendance. For all the 1016 students, it includes 364, or 35.8 per cent. Except in the private junior colleges, where relatively few men are concerned, the percentage for women is larger than for men, a fact which must have partial explanation in the smaller number of opportunities for self-help for women students away from home.

There can be no doubt that the chief deterrent factor to attendance elsewhere for these students, if no collegiate opportunities were at hand, would be the financial outlay involved. Only occasionally could it be some other influence not directly traceable to economic considerations.

IV. The Annual Cost of Attendance

The sources of the data on the cost of attendance.—Information concerning the cost of attendance was secured from the students themselves on the blanks referred to in the foregoing section. Students were requested

to report for a full school year on each item listed. Second year students were requested to base estimates on expenses for the preceding school year and first year students on expenses of that year up to the time of report. A first point of inquiry the answer to which was used throughout the comparisons to follow was, "Do you live at home while attending?" The items upon which estimates were requested were board, room, tuition and fees, textbooks and school supplies, laundry, traveling expenses to go to and from school, and incidentals. An estimate of the total cost was also asked for. It is to be noted that expenditures for clothing were not specifically requested and would not be likely to be reported unless in the total.

Estimates were provided by more than 2000 students, 957 in 16 public junior colleges, 720 in 8 private junior colleges, and 348 in 3 mid-western colleges and a state university. The numbers of these students who were living at home and away from home while in attendance will be found at points near the head of Table I. It will be seen there that students in the first group were with a small proportion of exceptions living at home during attendance, while those in the other types of institution were for the most part living away from home. These figures are not far from the proportions of these two divisions of students in the respective types of institution concerned.

Differences in the total costs.—From the estimates reported distribution tables were prepared for each item and for the totals, and from these tables were computed the measures of tendency, variation, and position appearing in Table I. The figures given are computations to the nearest dollar. Because it thus contains the median costs and the range in cost of the middle fifty per cent of cases for each of the three types of institution, this table makes possible significant comparisons among the three main groups into which the institutions fall. Two sets of totals, A and B, will be found near the head of the table, the former emanating from the estimated totals of the students themselves, the latter being the sums of the respective measures of tendency for items 3, 4, 6, 7, 8, 9, and 10 in the remaining rows of the table. The medians of these two sets of totals are shown again in Figure 30. Of the two, Total B probably supplies the better estimate of the cost of the bare essentials of a year of college work, although some weight also attach to the figures under Total A, since the students probably have in mind other items of cost than those listed to account for the differences between the totals of the items and the totals reported.

One notable tendency in differences in the measures of value to be found in the data presented is naturally that between the costs for students living at home and those living away from home while in attendance. This is well illustrated by the medians, but is not as apparent in the quartile measures.

TABLE I.

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For public junior colleges the difference between the medians of Total A is that between $126 and $400; for private junior colleges, between $262 and $917; and for institutions of the traditional type, between $286 and $623. For the medians of Total B the differences are approximately equal to those of Total A, except for the private junior college group for which it is reduced by somewhat more than $200. If, however, for this group the median of item 5 is substituted for those of items 3 and 4—a procedure partly justifiable, as will be subsequently indicated—there is a reduction of only $50 in the difference for private junior colleges.

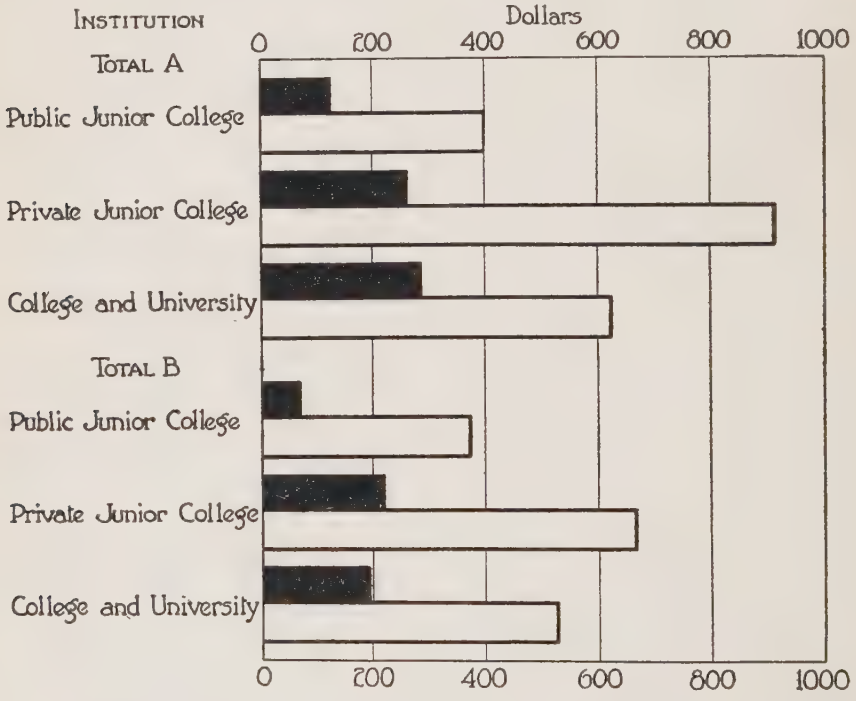

Figure 30

Median total annual costs of attendance for students at home and away from home in public junior colleges, private junior colleges, and in other higher institutions (black, at home; in outline, away from home)

A second notable tendency to difference in both totals is that between the figures for public junior colleges when contrasted with the two remaining types of institution. For example, the medians in Total A for students at home are less than half as large for public junior colleges than for the other two types of institution, while the medians in Total B show even greater proportionate differences. The costs for students not living at home while in attendance likewise show significant differences in favor of public junior colleges, although these differences are not proportionately as large.

A third tendency to difference is that between the totals for private junior colleges as compared with institutions of the third type, the standard higher institutions. This is seen, in the instances of most measures taken, to be in favor of institutions of the latter type.

The explanation of the differences in totals through differences in the items: (a) between students living at home and those away from home.—The difference between the total cost of attendance when a student lives at home and when he lives away from home while attending a public junior college may be seen, by glancing down the first two columns of figures, to be accounted for almost entirely by items 3 and 4, board and room. Differences in other items, viz., laundry, tuition, texts, travel, and incidentals, are not sufficiently large to have a marked effect upon the totals. This can hardly mean that the cost of food during nine months for a student living at home is negligible. It falls something short of the cost of board away from home. A careful estimate of this cost of food for young adults living at home, leaving out of account the item of labor, places it at $135 for the period of nine months included in the typical school year. To make a fair comparison with costs for students away from home, it is necessary to add this item of probable cost of food to the total annual expenses. This would not be called for in the case of the cost of room, since provision for the member of the family will usually be available whether he attends while living at home or elsewhere. In other words, there would seldom be additional outlay from the family income for rooming accommodations for a student living at home while attending a local institution.

An inference of the same general character may be drawn from a study of the total costs and the costs of the several items for each of the two groups into which the students attending each of the other two types of institution have been divided, i.e., the difference is determined primarily by the difference in the cost of items 3 and 4, board and room. The two items appreciably exceptional are Numbers 9 and 10, travel and incidentals. The difference between the medians for the former item in private junior colleges is $45 and in the college and university type, $36. The difference for incidentals is especially notable for private junior colleges, being almost $100, and only $19 for institutions of the standard type.

(b) Among the three types of institution.—The items that account for the differences between the public junior colleges on the one hand and the two remaining types on the other are, primarily, Numbers 7 and 10, respectively, tuition and incidentals, but others also, viz., laundry, texts, and travel, are partly contributory. As many public junior colleges make no tuition charge, except in the instances of some which do so only for nonresidents, the median cost on this item is very low for this group. It is considerably higher for private junior colleges than for other higher institutions. This

difference has its explanation in two facts primarily, (1) the lower tuition charge for students in the state university group, who make up almost a third of the students in the college and university who supplied estimates of cost on these items, and (2) the fact that some of the students in the private junior colleges were taking work in special departments like music and art, for which additional tuition charges are made. The difference in incidentals may be in part an exaggeration, since parents may be making expenditures for items falling under this head when students are living at home of which their sons and daughters do not take cognizance.

This comparison of the influence of the several items on the total annual expenditures is not complete without reference to the measures of tendency reported under item 5 in Table L, especially those which concern private junior colleges. Only about 100 of the total of approximately 650 students in private junior colleges not living at home while in attendance reported separately on the cost of items 3 and 4. The remainder gave figures covering the cost of both items together. This is because the authorities in the institutions represented make a blanket charge covering both items. On account of their numerical predominance, it appears, therefore, to be more appropriate to introduce into Total B for this group of students the measures of tendency of item 5 than of items 3 and 4 combined. As concerns the medians this means a difference of more than $150 in favor of the method used in arriving at the measures for Total B as presented in the table. It is safe to assume for the group of students living away from home while in attendance at private junior colleges that the median total cost was by this amount larger than that shown for Total B, that is, approximately $800, while the range in cost of the middle fifty per cent was approximately $650 to $1000.

Differences among the units within the groups of institutions.—The data so far presented must—because they concern types of units rather than particular schools—hide differences in yearly costs among the institutions of any single type. As differences in total costs among public junior colleges are primarily determined by differences in tuition, there can be little point in illustrating for this group. It will suffice to say that the range of tuition cost in the public junior colleges represented is from no charge in most institutions to a maximum of $100 in a single school. The median of students' estimates of total costs (for students away from home) in a low cost, private junior college was found to be $526 and in a high cost institution in the same group, $1346. The median in a low cost, standard higher institution was $524, and in a high cost institution, $700. Medians for most institutions in the respective groups range between these figures.

Comparing the cost for men and women.—As any notable difference between costs for men and women would be likely to affect the problem of popularizing higher education, from the data assembled median annual costs for each sex were computed and appear in Table LI. Only two instances of significant differences were found, those for students living away from home and attending the two types of junior colleges. The difference for public junior colleges may be in considerable part owing to the small total number of students represented. Responses from a small number of men, also, were available for private junior colleges. It does not appear that the costs for one sex need differ from those for the other.

TABLE LI

MEDIAN ANNUAL COST OF ATTENDANCE FOR MEN AND WOMEN IN PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, AND OTHER HIGHER INSTITUTIONS (COMPUTED FROM STUDENTS' ESTIMATES OF TOTAL COST)

INSTITUTIONS	AT HOME		AWAY	
	Men	Women	Men	Women
Public junior colleges	134	119	450	330
Private junior colleges	250	263	775	917
College and university	289	284	628	623

Summary.—The outstanding findings of this study of the estimates of expenditures by more than two thousand students in 28 different institutions are, that attendance while living at home is much cheaper than attendance away from home and that, since public junior colleges serve local constituencies primarily, the argument of popularization through lowered cost—and it is a powerful argument—applies more particularly to this rather than to the other types of unit. Another conclusion of some moment is that, for students away from home, the standard higher institution tends to be somewhat less expensive than the private junior college, although there is sufficient variation from unit to unit to afford exceptions to the rule. The cost of attendance in public junior colleges for students away from home is lower than in either of the other types, but is likely to rise somewhat as the numbers and proportions of such students increase to the point of reducing the proportionate frequency of living accommodations for students in the communities in which such units are located. The sole difference between public junior colleges and other institutions for such students (those living away from home) will then be the difference in tuition cost, which may or may not continue to exist, depending upon the policy of the state or local community in this regard.

V. Popularization through Propinquity of Opportunities for Higher Education

In a subsequent chapter (XXXVIII of Part V) where an effort is made to locate the size of community and of high school enrolment in which the establishment of junior college units of adequate minimum enrolment would be feasible, certain data are presented having meaning also for the present problem. The figures of two of the tables in the chapter cited above dealing with communities in north central territory may at least in part be cited here to indicate that the presence of a local higher institution increases the proportion who secure the opportunities of a higher education. One of these, Table CCXV shows the proportion of the population, i.e., the number in 1000 of the total, represented by those of its high school graduates who during a particular school year were enrolled in either of the first two years of work in higher institutions. As some of these communities contain local higher institutions—usually colleges—it has been possible to compare the proportions in communities with, and those without, such higher schools. For those without, these proportions average 5.6 per 1000 of the population, while for those with, they average 10.9. This is the same thing as saying that the presence of a higher institution in the community almost doubles the proportion of its population securing the benefits of the first two years of college education.

The other, Table CCXIII, shows the percentages which those graduating from the high schools who are in the first two years of higher institutions are of the total enrolment of the high schools. Here again, high schools in communities with and without local higher institutions are compared. The respective average percentages are 11.8 and 17.3, showing a difference of 5.5 per cent. This difference represents an increase in the proportion of almost a half—a difference in favor of high schools in communities with local higher institutions. Both these comparisons demonstrate that propinquity of higher institutions affects the proportions favorably—tends to popularize higher education. The fact that there are parents who take up their residence in communities with colleges in order the more easily to provide the opportunities of higher education for sons and daughters would add to, rather than subtract from, the inference drawn of the large extent of popularization—or of economic democratization—of higher education.

VI. Occupational Distribution of the Fathers of Students in Secondary and Higher Institutions

The approach to the problem.—Still another test of whether the junior college is designed to foster the economic democratization of higher education is made possible through a canvass of the occupational distribution

of fathers as reported by the students who were appealed to for the information used in this and two earlier sections (III and IV) of the current chapter. The methods of inquiry and the tabulation of responses adhered as closely as possible to those used by Counts[1] in his report of a recent investigation of the social composition of the student body in secondary schools. One reason for following this procedure was to make possible a comparison of the results of this aspect of the study with some of the results of the study referred to. The specific questions, answers to which were utilized in this portion of the study, concerned the fathers and were put in the following form:

Is he living?.....

Present occupation (State specifically; e.g., bookkeeper, travelling salesman, retailer, etc., not "business").....

Where or for whom does he work?.....

Is he owner or part owner of the business in which he works?.....

What was his occupation while living or working, if not living or working now?.....

The single exception as to the form of inquiry used is that for Harvard freshmen, referred to in the accompanying tables as "Freshmen in a Large Eastern University." The data used for this group were taken from the admission books of that institution, and the records here in turn had been copied by recording officers from cards filled out by students at the time of entrance. The item of information called for on the card regularly used in registration which pertains to this study is the "business or profession" of the father. The information concerning occupations of parents for this group is not as extended as for others represented in the study, a fact which gave rise to strictures in methods of tabulation of the responses to be referred to subsequently.

The institutions and students represented.—The total number of students included in the study is 2744. Their distribution to the several groups under which they are studied are: public junior college freshmen and sophomores, 1062; private junior college freshmen and sophomores, 705; college and state university sophomores, 346; and Harvard freshmen, 631. The sophomores of the public junior college group, 281 in number, are also separately considered. The sixteen public junior colleges represented are located in California, 3; Illinois, 1; Iowa, 2; Kansas, 1; Michigan, 1; Minnesota, 4; Missouri, 2; Texas, 1; and Wisconsin, 1. With the exception of the one in Wisconsin, which is a unit in a normal school, all are in city or high school districts. The seven private junior colleges are in Iowa, 1; Missouri, 5; and Virginia, 1. One of each of the three

[1] G. S. Counts, The Selective Character of American Secondary Education. *Supplementary Educational Monographs*, No. 19, May, 1922. University of Chicago.

colleges is in Illinois, Minnesota, and Wisconsin, and the state institution is the University of Minnesota. Data borrowed from Counts' study concern 17,265 students in the public high schools of Bridgeport, Connecticut; Mount Vernon, New York; St. Louis, Missouri; and Seattle, Washington; and 619 students in Phillips-Exeter Academy and the University of Chicago High School.

The proportions of students approached for this information who supplied it are sufficiently large to argue for representativeness. For some of the public and private junior colleges the count of students approached is almost complete. This is true also of one of the colleges, while in the others the proportions are lower. In the University of Minnesota, only a part of the sophomores was approached, the selection being alphabetically made. There is little reason to believe that if any factors were working in the direction of unrepresentativeness of those responding they should not operate in all groups concerned, except for Harvard freshmen where only data already recorded were used and where, as far as could be ascertained from the records, data concerning only freshmen entering for the first time in 1916 were included.

The procedure in tabulation.—The basis of classification of fathers' occupations was that used by Counts.[2] The order of grouping, as shown in Table LII, is roughly, but not accurately, that of the economic status of the occupational divisions represented, from the highest, proprietors, to the lowest, common labor. Counts states that the aim was "to get classes of reasonable homogeneity from the standpoint of social status, position in the economic order, and intellectual outlook." The procedure in tabulation discovered no difficulties not already made clear in his report. The single exception was in the use of the data for Harvard freshmen, which, especially because they contained responses to no such questions as "Where or for whom does he [the father] work?" and "Is he owner or part owner of the business in which he works?," made it impossible to locate with as much definiteness as in the other groups a small proportion of the parents concerned. In order to avoid unfairness to the institution in tabulating these doubtful cases, they were always placed in the lower of the two or three levels on which they might classify. The procedure followed is illustrated for twenty-four instances in which names of skilled trades were reported, as printer, 5 cases; tailor, 2; cobbler, 1; tanner, 1; painter, 1; machinist, 3; carpenter, 4; pattern-maker and machinist, 1; etc. Some of these at least belong almost certainly in Occupation Groups 1 and 7 and not in Groups 8, 9, 10, and 11, but all were, for the purposes of this study, tabulated in the latter groups. In this skilled trade group are included approximately two thirds of all genuinely doubtful cases. With the

[2] *Op. cit.*, Chapter IV.

method safeguarded in this way, it may be concluded that the distribution to the lower levels is at least as large as it would have been had answers to questions of the sort quoted been available, as was the case in the remaining groups.

TABLE LII

OCCUPATIONAL DISTRIBUTION OF THE FATHERS OF STUDENTS IN JUNIOR COLLEGES, PUBLIC AND PRIVATE, AND IN OTHER HIGHER INSTITUTIONS

PARENTAL OCCUPATION	PUBLIC JUNIOR COLLEGES		PUBLIC JUNIOR COLLEGES, SOPHOMORES		PRIVATE JUNIOR COLLEGES		SOPHOMORES IN COLLEGE AND STATE UNIVERSITY		FRESHMEN IN A LARGE EASTERN UNIVERSITY	
	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
1. Proprietors	203	19.1	50	17.8	208	29.5	87	25.1	225	35.7
2. Professional service	149	14.0	43	15.3	108	15.3	72	20.8	191	30.3
3. Managerial service	173	16.3	50	17.8	66	9.4	27	7.8	34	5.4
4. Commercial service	99	9.3	27	9.6	49	6.9	30	8.7	54	8.6
5. Clerical service	40	3.8	8	2.8	8	1.1	12	3.5	15	2.4
6. Agricultural service	151	14.2	33	11.7	190	26.9	78	22.5	9	1.4
7. Artisan-proprietors	30	2.8	9	3.2	12	1.7	9	2.6	2	0.3
8. Building trades	35	3.3	14	5.0	6	0.9	4	1.2	4	0.6
9. Machine trades	35	3.3	12	4.3	5	0.7	2	0.6	8	1.3
10. Printing trades	7	0.7	2	0.7	2	0.3	3	0.9	6	0.9
11. Miscellaneous trades	14	1.3	3	1.1	..	..	4	1.2	7	1.1
12. Transportation service	39	3.7	10	3.6	28	4.0	5	1.4	5	0.7
13. Public service	11	1.0	3	1.1	1	0.1	1	0.3	7	1.1
14. Personal service	7	0.7	4	1.4	2	0.3	1	0.3	4	0.6
15. Miners, lumber workers, fishermen	5	0.5	..	..	2	0.3	1	0.3	..	..
16. Common labor	12	1.1	3	1.1	1	0.1	3	0.9	1	0.2
17. Unknown	52	4.9	10	3.6	17	2.4	7	2.0	59	9.4
TOTALS	1062	100.0	281	100.1	705	99.9	346	100.1	631	100.0

The results of the canvass.—The results of the classification of the occupations of the 2744 students concerned are presented in Table LII. It gives the numbers and percentages of the fathers of each group of students belonging to each class of occupation. As the significance of the data becomes somewhat more apparent if compared with those assembled by Counts, Table LIII has been prepared, which utilizes in addition to the percentage distributions of Table LII, the two columns of percentages from Table LXIV[3] in the study referred to. For both this table of Counts' study and

[3] *Op. cit.*, p. 138.

Table LIII of the current inquiry Occupation Groups 8-16 have been merged into a single group designated as "manual labor." This name is not fully appropriate for Groups 12 and 13, but at the same time is not far enough from the truth to vitiate any conclusions to be drawn from the percentages resulting from the condensation.

TABLE LIII

PERCENTAGE DISTRIBUTION BY OCCUPATIONAL GROUPS OF THE FATHERS OF STUDENTS IN PUBLIC HIGH SCHOOLS, PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, OTHER HIGHER INSTITUTIONS, AND PRIVATE SECONDARY SCHOOLS

PARENTAL OCCUPATION	PUBLIC HIGH SCHOOLS[a]	PUBLIC JUNIOR COLLEGES	PUBLIC JUNIOR COLLEGES SOPHOMORES ONLY	PRIVATE JUNIOR COLLEGES	SOPHOMORES IN COLLEGES AND STATE UNIVERSITY	FRESHMEN IN A LARGE EASTERN UNIVERSITY	TWO PRIVATE SECONDARY SCHOOLS[a]
1. Proprietors	19.8	19.1	17.8	29.5	25.1	35.7	42.7
2. Professional service	9.4	14.0	15.3	15.3	20.8	30.3	31.0
3. Managerial service	16.5	16.3	17.8	9.4	7.8	5.4	11.5
4. Commercial service	9.5	9.3	9.6	6.9	8.7	8.6	9.0
5. Clerical service ..	5.8	3.8	2.8	1.1	3.5	2.4	2.1
6. Agricultural service	2.4	14.2	11.7	26.9	22.5	1.4	0.7
7. Artisan-proprietors	4.2	2.8	3.2	1.7	2.6	0.3	1.3
8. Manual labor	29.1	15.6	18.3	6.7	7.1	6.5	0.3
9. Unknown	3.3	4.9	3.6	2.4	2.0	9.4	1.4
TOTAL	100.0	100.0	100.1	99.9	100.1	100.0	100.0

[a] From Counts, *op. cit.*, p. 138.

A comparison of the columns for students in public high schools and public junior colleges shows more tendencies to similarity than to difference. However, the larger percentage in professional service and the smaller percentages in clerical service, artisan-proprietors, and manual labor indicate that the public junior college is to some extent more economically selective than is the public high school. The differences are in kind somewhat like those shown by Counts for points lower down in the school system.[4] The larger percentage in agricultural service is explained by the smaller size of some of the cities in which the public junior colleges are located and their proximity to farming territory. It is hardly to be assumed that this particular larger percentage represents a greater extent of economic democratization of education on this level, as the fathers of those whose responses fall in this group are all but exclusively owners. The same statement is

[4] *Op. cit.*, Chapter VI.

applicable to the large percentages for this occupational group in three other columns.

The third column of figures, that for sophomores in public junior colleges, is very similar to that for all students in this type of unit. If anything, it shows a slightly greater extent of economic democratization. If so, it is to be explained by a partial tendency of the sons and daughters of the more well-to-do to transfer to higher institutions elsewhere at the opening of the second college year, while those on lower economic levels would be under greater compulsion to continue to avail themselves of opportunities at lower cost nearer home. There is, however, no marked trend of this sort.

The percentages of the next two columns, those for private junior colleges and sophomores in standard higher institutions, are sufficiently similar to be considered simultaneously. The totals of the first two classes of occupations are almost equal, being, respectively, 44.8 and 45.9 per cent. The latter exceeds the former to some extent in Occupation Groups 4, 5, and 7, but the former is in turn exceeded by the latter in the proportion in agricultural service. The percentages of manual laborers are almost equal. When compared with the figures for public junior colleges (second column), however, the percentages for these two groups show some interesting contrasts. The larger percentages in the first two classes are at once apparent, as are also the *much* smaller percentage in manual labor and the tendency to smaller percentages in Classes 3, 4, 5, and 7. For Harvard freshmen and students in the two private secondary schools, the differences just noted are even somewhat more accentuated, being especially marked for the group last named.

The occupational distribution and its relation to the distribution of males 45 and over in the population.—A final check on the degree of economic democratization achieved in each of the types of higher institution represented in this section is afforded by the ratios between the percentages of the fathers in each occupational group as shown and the percentages of the total male population 45 years of age and over employed in the corresponding groups. The Bureau of the Census figures for 1910 were utilized in this portion of the study, the volume containing occupational data for the census of 1920 not having made its appearance at the time of the completion of this portion of the investigation. The reasons for using figures pertaining to men 45 and over are presented by Counts and need, therefore, not be repeated here. Their distribution to the several occupational groups is shown in Table LIV. It is there seen that two distributions have been obtained, one for Minnesota and Missouri combined, and the other for Massachusetts. Data for the two mid-western states

were used because they represent fairly well the distribution in most of the states in which the junior colleges, the colleges, and the state university are located. Some slight exception may be taken to this assumption, but not enough to invalidate the significance of the ratios found. For an analogous reason data for Massachusetts were used in the computation of the ratios for Harvard.

The ratios are to be found in Table LV and all but those for sophomores in public junior colleges reproduced in graphic form in Figure 31. The reader will probably understand without explanation that they have been obtained by dividing the percentages in the second, third, fourth, fifth, and sixth columns of figures in Table LIII, by the percentage columns in Table LIV. The percentages for Minnesota and Missouri were used for all columns but the last in Table LV, and for this the percentages for Massachusetts were used.

TABLE LIV

NUMBERS AND PERCENTAGES OF MALES 45 AND OVER IN (1) MINNESOTA AND MISSOURI AND (2) MASSACHUSETTS (CENSUS OF 1910) ENGAGED IN CERTAIN GROUPS OF OCCUPATIONS

OCCUPATIONAL GROUP	MINNESOTA AND MISSOURI		MASSACHUSETTS	
	Number	Per Cent	Number	Per Cent
Proprietors	38,952	8.6	32,504	11.6
Professional service	14,252	3.1	10,906	3.9
Managerial service	17,879	3.9	18,410	6.6
Commercial service	16,171	3.5	14,870	5.4
Clerical service	9,460	2.1	10,028	3.6
Agricultural service	213,701	46.9	27,853	9.9
Manual labor	145,118	31.9	165,492	59.1
TOTALS	455,533	100.0	280,063	100.1

The significance of the ratios shown may be the more readily sensed if one bears in mind that, assuming families of equal size in all the occupational levels, equal representation of all occupational groups would result in ratios approximating unity. It appears at once that the several groups are far from equally represented. None of the types of institution included in the comparison has achieved an extent of economic and social democratization in which its authorities are warranted in taking great pride. Nevertheless, the public junior college, as shown by the smaller percentages in the upper levels and larger percentages in lower levels, is farther along the way than any of the remaining types. At certain points

the private junior college compares favorably with standard colleges in the Mid-West and with Harvard, but at others the comparison is not as favorable to it. The ratios for agricultural service cannot be particularly significant, since, as has already been indicated, most of those who report fathers in this line also report them to be owners, which would justify to some extent placing them in the group of proprietors. All things considered the upshot of the comparison on the basis of occupational distribution of fathers is a conclusion in confirmation of the public junior college movement.

TABLE LV

RATIOS OF THE PERCENTAGES OF FATHERS IN CERTAIN GROUPS OF OCCUPATIONS TO THE PERCENTAGES OF MALES 45 AND OVER ENGAGED IN THE SAME GROUPS

OCCUPATIONAL GROUP	PUBLIC JUNIOR COLLEGES	PUBLIC JUNIOR COLLEGE SOPHOMORES	PRIVATE JUNIOR COLLEGES	COLLEGES AND STATE UNIVERSITY	LARGE EASTERN UNIVERSITY
Proprietors	2.2	2.1	3.4	2.9	3.1
Professional service	4.5	4.9	4.9	6.7	7.8
Managerial service	4.2	4.6	2.4	2.0	0.8
Commercial service	2.7	2.7	2.0	2.5	1.6
Clerical service	1.8	1.3	0.5	1.7	0.7
Agricultural service	0.3	0.2	0.6	0.5	0.1
Manual labor	0.5	0.6	0.2	0.2	0.1

VII. CONCLUSIONS FROM THE INQUIRY

Each of the lines of inquiry pursued for the content of this chapter lend support to the claim that the public junior college fosters the economic democratization of higher education. This is shown in the fact that lowered cost is the most frequently recurring reason given by parents for attendance of their sons and daughters upon local junior colleges rather than upon higher institutions elsewhere, but more especially in the large proportions of these parents who admit frankly that they could not afford to send their sons and daughters to institutions away from home. It is shown in the large proportions of students in all types of higher institutions living at home while in attendance who acknowledge that they would be certain or likely to be deprived of the opportunities of higher education if required to attend away from home. It is emphatically demonstrated in the lowered costs for students living at home while in attendance, the argument applying particularly to students in public junior colleges, first, because of larger proportions of students living at home while in attendance and, second, because tuition costs and certain other items run lower in such institutions. It has been shown again in the increased proportions which those enrolled in higher institutions are of populations of communities and of high school enrolments in these communities in cases where

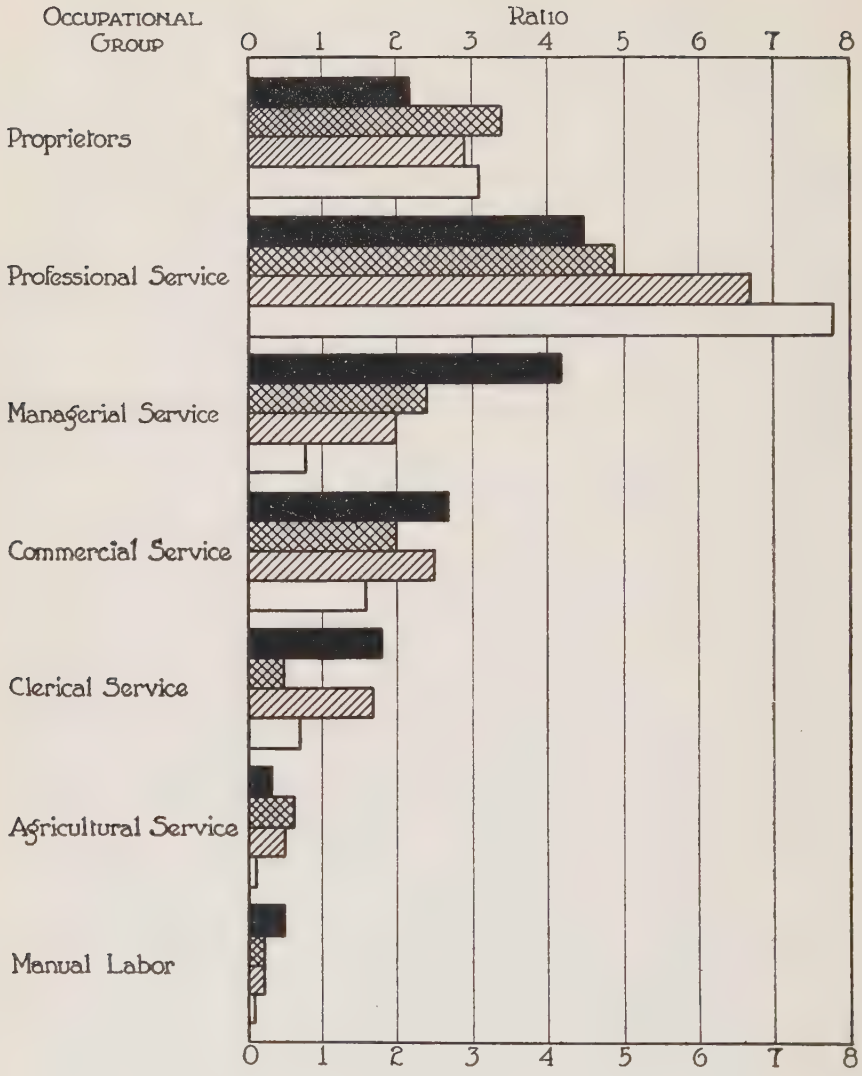

Figure 31

Ratios of the percentages of fathers in certain groups of occupations to the percentages of males 45 and over in the same groups (black, public junior colleges; crosshatching, private junior colleges; single hatching, colleges and a state university; in outline, large eastern university)

opportunities for higher education are immediately accessible. The bulk of this increase must be attributable to reduction in costs to those who can attend while living at or near home. Most significant of all, perhaps, is the democratization shown in the increased proportions in public junior colleges of the sons and daughters of fathers in the lower levels of occupational groups, levels less frequently represented in the other types of higher institution. Without doubt, we have in the public junior college an important influence for the economic and social democratization of educational opportunity. The claim is not as apposite to the private junior college and cannot be so until there is a change of policy in administering that type of unit which will lower the cost both to students living at home and those living away from home while in attendance, and which will make them more largely locally serviceable than they now tend to be.

It will be essential to keep this important argument of economic democratization before us throughout the consideration of the type of junior college unit to foster. At other points in this report data appear which emphasize the necessity of encouraging the establishment of sizable rather than small units. In order to have the argument of economic democratization apply, it will be imperative to establish the institution primarily in communities of good size; otherwise inordinately large proportions of students will be required to leave home to attend, thereby removing an important justification of the movement.

It remains to be said that through making available at lower cost the first two years of higher education, the junior college will often operate to popularize the upper years of collegiate and university education, because of reducing the cost of the full course to approximately that of the years away from home. To many parents and prospective students the cost of four full years away from home must seem prohibitive, while the cost of two years will seem a much less insurmountable obstruction. Add to this relief the increased maturity of the junior college graduate, i.e., his advance of two years toward a status of self-help, and we are making much more feasible for many the completion of a full college or professional curriculum.

CHAPTER VIII

THE JUNIOR COLLEGE AND TRAINING FOR SEMIPROFESSIONS

I. The Aim and Scope of the Chapter

The special purpose concerned.—As was noted in Chapter II, one of the aspirations designated as a special purpose of the new unit is the provision of occupational training of junior college grade, this aspiration being entertained by approximately half of all the sources examined in the search for the claims made for the junior college.

The authors of the statements analyzed have in mind here preparation for occupations, the training for which is to be concluded during the junior college period, and which are, from the standpoint of the period of training involved, *semiprofessions.* Such occupations are to be distinguished, on the one hand, from *trades,* the training for which is concluded during the secondary school period, and, on the other, from *professions,* adequate preparation for which requires four or more years of training beyond the high school.

The need for inquiry in the field.—Those who advocate culminal occupational training on this level mention large groups like commerce, industry, agriculture, and home economics. They seldom, however, specify particular occupations. In fact, although frequent brief references to the problem are to be found in literature dealing with occupational training, one looks in vain for anything like an adequate treatment. With all the other aspects of the junior college problem into which it was necessary to inquire in this investigation it was manifestly impossible to include a comprehensive study of this particular aspect. Moreover, our present want of experience with semiprofessions must prevent our arriving at anything like finalities, except in the matter of the desirability and feasibility of development along these lines. Its significance, however, made some extent of survey of the situation touching it imperative.

The nature and scope of the inquiry made.—The study of this aspect of the junior college problem followed two main directions. The first was a canvass of present educational facilities to note any outcroppings of opportunities for semiprofessional training. This phase of the inquiry included examination of current junior college offerings, two-year curricula in standard higher institutions, and of courses for high school graduates in business colleges, extension departments in universities, a group of miscellaneous institutions advertising training along a wide variety of lines, and private correspondence schools. The second was that of ascertaining

the opinions of a large number of deans (and heads of departments) of engineering, commerce, and agriculture as to the proper level of terminal training for a number of occupations in, or related to, their special fields. Mention of minor supplementary inquiries is deferred to the points at which they are presented.

II. Current Outcroppings of Semiprofessional Training

In junior colleges.—That some junior colleges include occupational materials in their offerings was made apparent in Chapter III. The proportion of the total offering assigned to such courses in junior colleges was shown to be much larger than in junior college years of separate colleges of liberal arts or of those connected with universities. If the reader will examine again Table XV of the chapter referred to with the purpose of conjecturing for whom the occupational courses are appropriate, he will not be far wrong in the conclusion that some of them would be of service to the student with professional ambitions, others to the student desirous of securing some extent of occupational training on the semiprofessional level, while still others would be useful to either type of student. An illustration of the first sort would be analytical mechanics; of the second, the secretarial courses; and of the type serviceable in both respects, the bulk of the courses listed.

The writer's examination of catalogues of junior colleges and his conversations with junior college heads and instructors lead him to believe that in some instances, without doubt, offerings of the sort referred to have been introduced for the primary purpose of providing terminal occupational training on this level. On the other hand, this intent is not as general as may be desired, a majority of the institutions seeming to have an eye single to meeting the demands of higher institutions to which junior college graduates will be likely to transfer, an attitude not altogether unreasonable in the earliest stages of development of an educational institution.

Among the instances of obvious intent to provide in junior colleges culminal occupational training the following may be cited. One of the best examples in agriculture is that of Chaffey Junior College at Ontario, California. In this institution courses valuable both for culminal and preprofessional purposes are offered. The unit maintained in the State Normal School at Oshkosh, Wisconsin, features a curriculum "organized to meet the needs of students who desire to become technical chemists after two years of study." A number of students who have completed this work and who did not continue their education are employed in lines for which the curriculum was intended to prepare them. A state junior college in the south offers an automobile mechanics curriculum terminating in the second college year, but at the time of the writer's visit, only a few high

school graduates were enrolled in it. Those who were taking the special work of the curriculum were for the most part not high school graduates. While undoubtedly valuable occupational training was being given, the students were not receiving it as semiprofessional preparation in the sense in which this term is here being used. In much the same situation is a curriculum in oil production offered in a junior college of southern California. There is this year in operation for the first time in connection with the Riverside, California, Junior College a half-time co-operative plan of semiprofessional training along industrial and commercial lines that gives promise of great usefulness. In conjunction with the junior colleges at Kansas City, Missouri, and Grand Rapids, Michigan, are given the theoretical portions of the curriculum for nurses in training. In the same units are provided work along secretarial and other commercial lines that may be looked upon as in the nature of semiprofessional training. Here also should be included some of the work in home economics available in a number of junior colleges, public and private.

The relatively large amount of work in the field of education (see Tables VI and XV, Chapter III) and its frequency of appearance, especially in private institutions, is in harmony with what is in essence by far the most prevalent semiprofessional training function of the junior college—preparation for teaching. This is especially characteristic of private junior colleges of Missouri and the southern states, but is also to be found elsewhere to some extent. It is the claim to the performance of this function exclusively which makes the catalogues of private junior colleges yield as large a proportionate recognition of the claim under consideration as the other types of literature examined, as shown in Table V and Figure 4 in Chapter II. As illustrations we may quote a statement typical of catalogues of junior colleges in Missouri, that "the State Department of Education will grant to all graduates of the college who have completed the prescribed courses in education a three-years' state certificate permitting the holder to teach in the public schools of towns and cities of Missouri," and another characteristic of those in Texas, that classification "by the State Department of Education as a Junior College of first class . . . . signifies that the student completing five courses in our first college year, one of which is Education, will be granted a first grade State certificate for four years without examination." Although elementary school teaching, into which the most of those holding these certificates go, is, from the standpoint of the period of training typical of its participants, still a semiprofession, it may well be asked whether it should remain so, or, if it must, whether one or two years of regular collegiate work is the proper sort of training for it. State normal schools should be in a position to give better training for elementary school teaching than are institutions stressing the first two years of work

in colleges of liberal arts. The only excuse for approving the practice is the dearth of teachers with anything like adequate preparation for the work. Certainly, for high school teaching, into which a considerable proportion of junior college students go upon graduation, the semiprofessional level is far too low.

The offerings described seem at least to be the beginnings of a constructive tendency to endeavor to provide for those not going on, something in the way of semiprofessional training. While totally absent from most units and usually not wide in scope where offered, we have in these beginnings an earnest of generous future development, especially in view of the recency of the junior college movement.

In standard colleges of engineering and agriculture.—A letter of inquiry was sent to deans or directors of all colleges of engineering and agriculture, asking them to give information concerning all two-year curricula offered in their institutions, stating the character of any such curricula as collegiate or non-collegiate, and also stating the enrolment in each during 1920-21.

To the 128 letters sent to heads of standard engineering colleges, as listed in the educational directory published by the Bureau of Education, 103 replies were received. Of that number, six institutions reported one-, two-, or three-year curricula of college grade in engineering or allied industrial activities. The institutions and the curricula are as follows:

Alabama Polytechnic Institute
- Two-year courses in
  - Applied electricity
  - Architecture
- One-year course in
  - Wireless telegraphy

University of Alabama
- Two-year technical courses designed to fit men for such positions as
  - Analytical chemist
  - Structural and topographical draftsman
  - Land, city, topographical, and railway surveyor
  - Superintendent of road and pavement construction
  - Power plant assistant
  - Mill electrician
  - Assistant shop foreman
  - Mine and quarry superintendent, etc.

Des Moines University
- One-year courses in
  - Electrical construction and repair
  - Surveying and highway construction
  - Concrete construction
  - Contracting and building
  - Steam engineering and power plant operation
  - Farm mechanics

Des Moines University
One-year courses in—*Continued*
Mechanical drafting
Structural drafting
Architectural drafting
Automobile industry
Georgia School of Technology
Two-year courses in
Architecture (61)
Textiles (11)
University of South Carolina
Two-year course in
Highway engineering
State College of Washington
Two-year courses in
Automobile engineering
Highway engineering
Architecture for draftsmen and building contractors

The numbers of students enrolled were stated by only one institution, the Georgia School of Technology, and they have been indicated in parentheses following the names of the curricula. The dean of the College of Engineering at the University of South Carolina said of the two-year curriculum in highway engineering, "We have had a number of men enroll for this course, but in every instance they have remained and completed the full course required for the degree of C.E." The dean at the University of Alabama says of their two-year technical curricula that there are usually only two or three students each year in them, that the men generally find they want the four-year curriculum and, that they are enabled to transfer without much loss of time.

In agriculture forty-seven letters were sent out and forty replies received. The following six institutions reported that they were giving two-year collegiate curricula:

University of Arizona (12)
University of Nebraska (30)
Agricultural and Mechanical College of Texas
University of Wisconsin (121)
Iowa State College
University of Maryland (19)

The numbers in parentheses indicate the enrolment in 1920-21. Examination of catalogue descriptions showed, as might be expected, that the foundational work in sciences and cultural subjects given with the four-year curriculum, was pared down or condensed, and most of the students' time given to the applied subjects.

A number of institutions—eight colleges of agriculture and sixteen colleges of engineering—reported subcollegiate curricula of from one to three years' duration. Colleges of agriculture also afforded a number of "short" or "special" courses.

From the results of this inquiry we must conclude that our professional schools tend to hold rather closely to their professional standards, and that they are doing little in a direct way to train people for occupations on the semiprofessional level. The usual small enrolments in the shorter curricula and the tendency of students to shift to the longer fully professional offerings are not likely to influence the authorities in such institutions to introduce more of them. It may at the same time be seriously doubted if, with the stigma which attaches to attendance upon a shorter curriculum where the longer is the more honorific, these semiprofessional curricula in standard professional schools can ever make much headway.

In extension work.—A third source examined were the bulletins of twenty-eight extension departments of universities, twenty-one being state and the remainder municipal and private institutions. Request for extension announcements had been made of a large number of schools listed in the Directory of General Extension Service, United States Bureau of Education *Bulletin,* 1919, No. 84, selection being made on the basis of institutions that seemed to be doing something of importance in extension work.

University extension departments perform many kinds of service, of which only the extension classes and correspondence study will be considered here. In the twenty-eight catalogues examined, it was found that the extension work of about twelve state institutions and two private institutions is largely or entirely straight liberal arts college material, and it may safely be said of the majority of the twenty-eight that the work is planned primarily for people who will eventually be graduated from one of the university colleges and enter a profession, as contrasted with a semiprofession. This situation is not hard to explain. The easiest courses to offer in extension classes or by correspondence are those already planned and taught in the university proper; and the university aims to give professional training.

Thirteen institutions are conducting extension classes with some bearing on semiprofessions in home economics, business, engineering and mechanical activities, and teaching. Sixteen are offering correspondence study courses with bearing on semiprofessions in the same fields. But it must be remembered that at the top all these occupations are to be considered clearly as professions, and training for them is given by the universities in four- and five-year curricula. It is doubtful, therefore, if the extension departments as a group are consciously aiming at the semiprofessional levels.

Constituting exceptions to this conclusion, the following points may be mentioned: three university extension departments have definitely outlined curricula in the field of business requiring two or three years to complete through evening courses only. Practice varies as to allowing regular university credit for the courses, some of which are: accounting, money and banking, commercial law, corporation finance, real estate, insurance, etc.

One of these three institutions offers evening curricula three years in length in architecture and civil, electrical, and mechanical engineering. Still another institution, a state university, offers a large number of courses in business and engineering, for a majority of which credit toward regular university degrees is not given. Though not arranged in definite curricula, the nature of the courses seems to be somewhat along the line of a recognition of semiprofessional occupations.

In business colleges.—The study of this group was made from the catalogues of twenty-two representative schools. Seventeen of them are giving only courses to fit people for clerical work as bookkeepers, stenographers, typists, clerks—clearly on no higher level than the work done by the commercial departments of our high schools. The other five institutions are giving the same sort of training, but in addition offer a few courses only for high school graduates who have had an ordinary business college or a secondary school business course. These courses are in higher accounting and secretarial service. One secretarial course is advertised as being from four to eight months in length, and another as from six to eight months in length. From this we must conclude that they are too shallow to turn out a secretary who is many notches above a stenographer. It is also doubtful if the accounting courses could turn out an accountant very superior to a bookkeeper, although there is nothing definite in the description of the course upon which such an opinion could be based. In summary, it may be said that the business colleges have assumed that their most important function is to train people for clerical occupations, but are doing a little along lines under consideration in this chapter.

In a miscellaneous group of institutions.—Another group of schools were those listed in the United States Bureau of Education Directory[1] as institutions of higher rank than secondary schools but not regarded as universities, colleges, or normal schools. All were approached for publications descriptive of the work offered and these came in from a total of twenty-nine institutions, three of them publicly, and twenty-six privately, financed. There are five schools or departments of schools giving training for engineering and allied activities, seven for business activities, five for home economics, and twenty-two for art, music, expression, and special teaching. All these schools are giving training on what may be presumed to be, at least approximately, the semiprofessional level and all but a few confine their activities to one of the four fields mentioned.

Schools of the engineering type offer two- and three-year curricula above the high school. Some idea of their scope may be had by noting the names of curricula in one school: industrial mechanical, industrial electrical, industrial chemistry, industral teacher-training, electrical construction, and archi-

[1] United States Bureau of Education *Bulletin*, 1920. No. 33. pp. 140-44.

tectural drawing and design. The business schools, while conducting some work on the semiprofessional level, also gave courses clearly clerical in nature. They train accountants, secretaries, salesmen, commercial teachers, subordinate business executives, etc. Most of the five schools specializing in home economics offer two-year curricula calculated to fit students to be dietitians, costume designers, institution managers, home makers, and teachers of home economics.

By far the largest division of this group is made up of schools of art, music, and expression, of which only two are publicly supported. The catalogues of this group stress the cultural as well as the occupational aspects of the work they offer. For example, one school of art states its purpose to be to train "practical designers and illustrators, teachers of drawing and craft work . . ., for fine arts and for culture." Another catalogue states that the school issuing it trains "painters, illustrators, sculptors, decorative modelers, interior decorators, textile designers, and commercial designers." Four are only summer art colonies. Many of these schools give two- and three-year curricula.

Although, as designated, this group of schools is miscellaneous, they seem to be training students for a wide variety of semiprofessions.

In private correspondence schools.—The last group of catalogues studied were those of privately operated correspondence schools. Only a small group of seven schools advertising rather extensively were requested to send materials descriptive of their offerings. Some of them list courses covering a wide range including elementary, secondary, and university work and, accordingly, they have no standards for admission. Although comparison of a school's courses with those of another such school, or with those of a high school or university, is possible only in a vague way, the attempt was made to take account of work of a professional or semiprofessional nature.

The main divisions into which these courses fall relate to engineering and allied activities and business, with two schools giving just a little attention to commercial illustration and design. Some idea of the magnitude of the work that these schools do, or that they claim to do, is conveyed by a survey of the catalogue of one of the largest, which shows the field of engineering and allied activities to be separated into twenty-one divisions, in each of which there is offered an average of eighteen courses. The work of a school stressing business courses covers the following range: business administration, higher accounting, law (toward LL.B. degree, and also commercial law for business men), interstate commerce and railway traffic, banking and finance, business letter-writing, industrial management efficiency, commercial Spanish, and C.P.A. coaching.

Conclusions.—This examination of the offerings of something more than three hundred institutions or organizations for evidences of training of semiprofessional sorts, although not discovering a full array of systematized and standardized curricula, shows at least an appreciable beginning and a partial awareness of the large need represented. An occasional junior college has sensed this need and is providing preparation along semiprofessional lines. Recognition of the function concerned has found its way as two- or three-year curricula in a small proportion of instances into the offerings of colleges of engineering and agriculture. Registration in these curricula has not usually been large and is not likely to become so on account of the presence of dominating curricula of standard length. University extension divisions in several instances, through establishing courses and curricula of an occupational sort on this level, seem to be increasingly appreciative of the value of this type of service. Business colleges, although engrossed primarily with the task of preparing for occupations on the clerical level, have in a few instances taken steps in this direction through making special provision for high school graduates. The educational offerings of groups of miscellaneous institutions and correspondence schools also contain evidences of a corroboratory character.

If the outcroppings discovered are any indication, proper lines of development of semiprofessions and semiprofessional training are the fields of business, engineering and allied activities, applied arts, agriculture, and home economics. Despite the difficulties of establishing lines of distinction between trades on the one hand and semiprofessions on the other, and again, semiprofessions and professions, we seem to have in these evidences some support of a belief that there are and should be occupations on the intermediate level, and that they should have legitimation by the provision of ample standardized curricula in preparation for them. That most of the outcroppings are found in connection with the less formal agencies of education should not be regarded as discrediting the necessity for the development, inasmuch as many educational innovations of merit have first made a place for themselves in a supplementary and external capacity, later to be incorporated as regular features of our school system.

III. Expert Opinion on Semiprofessions

How the opinions of experts were secured.—For the purpose of determining specifically what occupations might be classified as semiprofessions on the basis of the amount of education and other preparation required, a list was made of all occupations for which, in the opinion of some authority, preparation should be made in courses of training approximately two years in length, with a high school education or its equivalent as a prerequisite. This opinion might have been stated rather definitely or merely implied.

The sources from which the lists were gathered were numerous and miscellaneous. Among them, of course, were the materials canvassed for the purposes of the foregoing section. Among the principal additional sources were:

1. Trade Specifications and Occupational Index of the United States Army. John J. Swan, for the Committee on Classification of Personnel. War Department Document No. 774.
2. Descriptions of occupations prepared for the United States Employment Service, 1918-19, published as bulletins by the United States Bureau of Labor Statistics.
3. Reports of vocational surveys for Minneapolis, Minnesota; Richmond, and Evansville, Indiana, etc.
4. Filene, Catherine, Careers for Women.
5. Periodicals. A large number of articles as referred to under more than a score of index topics in the *Readers' Guide* and the *Industrial Arts Index* were examined.
6. Conferences with university deans and department heads.

An examination of the list showed that there were, in addition to many important and unimportant occupations in widely scattered fields, three main classes, viz., commerce, engineering, and agriculture. To secure a collective opinion of the training levels on which occupations in these three main fields should be located, check sheets were sent to deans or directors of schools in the three fields represented. In the case of commerce, heads of departments in institutions not maintaining schools of business but apparently making extended offerings in this field were also included. The numbers of check sheets sent out were: commerce, 60; engineering, 128; agriculture, 48. The list of occupations for each group was preceded by the following definitions and directions:

DEFINITIONS FOR THE PURPOSE OF THIS STUDY

Profession.—An occupation for which the training should be that given by an institution requiring for entrance at least graduation from an accredited secondary school, and offering a course of college grade of no less than four years in length and culminating in an appropriate and recognized degree.

Semi-Profession.—An occupation in order to enter upon which one should prepare himself with a course of training approximately two years in length, with a high-school education or its equivalent as a prerequisite.

Trades or Clerical Occupations.—Those occupations in order to enter upon which one should be trained in a public or private high school, trade school, commercial school, or other institution which presupposes a knowledge of the common-school subjects and gives education on a level of less than college grade.

Please indicate by a check mark in the proper column below the occupational level on which you think it *typically proper* to consider each of the occupations in the list, according to the definitions given above. Think of each occupation, not as a stepping stone to something higher, but as a final goal.

Some of the difficulties confronting those of whom this co-operation was requested are indicated in the following paragraph which was a part of the letter sent with the check sheet of occupations:

In our efforts to locate the semi-professions, we have, naturally, been confronted by the lack of standardization of occupations, of the names of occupations, and of the training for occupations. The lack of opportunities for training in many of these fields at present and the fact that there are many people on the middle or higher occupational levels who have been largely self-trained and self-educated, are factors in our problem of determining the grade or extent of schooling practicable and feasible for the semi-professions. To overcome partially this difficulty and to locate lines of cleavage between the different levels of occupations, I am seeking the collective opinion of deans or directors of colleges of engineering, commerce, and agriculture.

Many of those who co-operated wrote letters expressing belief in the fundamental importance of such a study and volunteering comments on the difficulties they had found in attempting to classify occupations. The chief difficulties mentioned may be stated in paraphrase as follows:

1. Men representing the widest range of schooling can be found in the occupation, many having even less schooling than is indicated by any one of the three classes.
2. Schooling may have a very slight relationship to one's success, progress depending largely on the individual.
3. Many of the occupations are usually carried on in connection with other work and the training is generally given in connection with training for other occupations.
4. Practical experience is more important than schooling for many of the occupations listed.
5. The actual occupations that would be included under some of the names given vary most widely in character, importance, and in responsibilities involved.
6. All of the education one could get would be desirable for any occupation.

The results of the balloting.—When the returns from the questionnaire were tabulated, it was found that the number of judgments passed on the different occupations showed some variation, due to the fact that some of the judges did not classify all of the occupations. Furthermore, a few judges checked some occupations in two columns, thus indicating that in their minds the occupation might be on either of two levels. And in a very few cases checks were found in all three columns. The number of judgments in commerce was from seventeen to twenty-three; in engineering, from sixty to eighty-four; and in agriculture, from twenty-nine to thirty-six.

The collective opinion of the judges is set forth in percentages in Tables LVI, LVII, LVIII. Column 1 of each table shows for each occupation the percentage of judges locating it as a profession; column 2 shows the percentage who checked it as either on the professional or semiprofessional level; column 3, the percentage checking it as a semiprofession; column 4, the percentage checking it as either on the semiprofessional or trade-clerical level; column 5, the percentage checking it as on the trade-clerical level; column 6, the percentage checking the occupation as on all three levels. Column 7 will be explained in a later paragraph. The number on which the percentages for each occupation were based was the number of judgments passed on each particular occupation.

The arrangement of occupations in the tables is as follows: first were listed all those which were classified by half or more of the judges as being semiprofessions; next were listed those judged to be semiprofessions by from a third to a half of the judges; and, finally, all the remaining occupations. In Table LVI, we see in reading down the third column that the first fourteen, or approximately a fourth, of the occupations listed under commerce are classified as semiprofessions by a half or more of the judges, and thirty-five, or approximately three fifths, by a third or more of the judges. Of the twenty-two occupations numbered from 36 to 57, inclusive, three (Numbers 42, 55, and 56) are voted to be on the clerical level, and nineteen by good majorities are adjudged to be professional. Likewise, of the 104 occupations listed under engineering in Table LVII, forty-three, or approximately two fifths, are classified as semiprofessions by more than half the judges; and sixty-five, or more than three fifths of the entire list, are located on this level by more than a third of the judges. The remaining occupations in this field presented such a sharp contrast that it was not difficult to group, and, accordingly, it will be noticed in column 1 that those numbered from 66 to 94 inclusive are located by large majorities of judges as strictly professional, and that those numbered from 95 to 104 inclusive are clearly on the trade level, as shown in column 5. Again, we see in reading down the third column in Table LVIII, that twelve, or just twenty-five per cent, of the occupations listed under agriculture and forestry are rated as semiprofessions by a half or more of the judges; that thirty-seven, or more than three fourths, are classed as semiprofessions and checked as being on this level by a third or more. Of the remaining occupations, all but one—Number 38— are rated as professions by the majorities of the deans venturing opinions.

In thus directing attention especially to the percentages recommending occupations for a place with the semiprofessions, there may be some tendency to overlook the fact that in some instances larger percentages judge the occupation to be on one of the other levels. For instance, the work of cost expert (Number 20 in Table LVI), while placed with semiprofessions by 33.3 per cent of the judges, is believed to be on the professional level by 57.2 per cent. Similarly, the collection man (Number 17) is classed with semiprofessions by 36.3 per cent, and with clerical occupations by 59.0 per cent. As long as predominant judgments are being used here to ascertain the training level of occupations, it is hardly appropriate to ignore instances of this sort.

TABLE LVI

PERCENTAGE DISTRIBUTION OF JUDGMENTS OF FROM 17 TO 23 DEANS OF COLLEGES (OR HEADS OF DEPARTMENTS) OF COMMERCE ON THE ALLOCATION OF OCCUPATIONAL LEVEL OF 57 SELECTED OCCUPATIONS IN COMMERCE

OCCUPATIONS	PROFESSIONS	PROFESSIONS OR SEMIPROFESSIONS	SEMIPROFESSIONS	SEMIPROFESSIONS OR CLERICAL OCCUPATIONS	CLERICAL OCCUPATIONS	CHECKED AS ON ALL THREE LEVELS	INSTITUTIONS IN WHICH SEMIPROFESSIONS CAN BE PREPARED FOR
	1	2	3	4	5	6	7
1. Broker, commercial	27.3	4.5	50.0	0.0	18.2	0.0	70.0
2. Broker, loan	22.7	4.5	54.5	0.0	18.2	0.0	50.0
3. Broker, stock	27.3	9.1	59.0	0.0	4.5	0.0	70.0
4. Buyer, city department store	15.0	5.0	65.0	5.0	10.0	0.0	80.0
5. Chief clerk	4.5	0.0	50.0	4.5	40.9	0.0	20.0
6. Credit man	28.5	0.0	62.0	0.0	4.8	4.8	50.0
7. Designer, commercial	11.8	11.8	58.0	0.0	17.5	0.0	10.0
8. Insurance agent	19.0	0.0	62.0	0.0	14.3	4.8	10.0
9. Insurance adjuster	22.7	0.0	50.0	0.0	22.7	4.5	20.0
10. Jobbing merchant	21.0	5.2	63.2	5.2	5.2	0.0	60.0
11. Wholesale merchant	35.0	5.0	50.0	5.0	5.0	0.0	40.0
12. Shipping department head with large manufacturing concerns	20.0	10.0	50.0	0.0	20.0	0.0	40.0
13. Statistical clerk	13.6	4.5	50.0	4.5	27.2	0.0	40.0
14. Storekeeper with large manufacturing concerns	4.5	4.5	50.0	0.0	36.4	4.5	30.0
15. Accountant, general	45.5	4.5	45.5	0.0	4.5	0.0	30.0
16. Claims or complaint adjuster	9.1	0.0	45.5	4.5	40.9	0.0	30.0
17. Collection man	0.0	0.0	36.3	4.5	59.0	0.0	20.0
18. Commission merchant	19.0	4.7	47.7	0.0	28.5	0.0	30.0
19. Correspondent	23.8	9.5	33.3	0.0	33.3	0.0	50.0
20. Cost expert	57.2	0.0	33.3	0.0	4.8	4.8	20.0
21. Executive secretary of non-commercial organization	47.5	5.6	36.9	0.0	10.5	0.0	10.0
22. General manager of store	52.5	4.7	33.3	0.0	9.5	0.0	40.0
23. Department store merchant	40.0	10.0	40.0	0.0	10.0	0.0	40.0
24. Retail merchant (one-line store)	15.0	5.0	40.0	5.0	35.0	0.0	30.0
25. Purchasing agent	55.0	5.0	40.0	0.0	0.0	0.0	10.0
26. Real estate agent	15.0	0.0	45.0	0.0	35.0	5.0	40.0
27. Automobile salesman	13.1	0.0	34.8	8.7	43.4	0.0	10.0
28. Insurance salesman	20.0	0.0	40.0	10.0	30.0	0.0	20.0
29. Farm power machinery salesman	14.3	4.7	33.3	9.5	38.0	0.0	20.0
30. Adding machine salesman	19.0	0.0	33.3	9.5	38.0	0.0	30.0
31. Piano and phonograph salesman	10.0	0.0	34.9	10.0	45.0	0.0	50.0
32. Secretary, private	22.7	18.4	45.5	4.5	4.5	4.5	40.0
33. Soliciting freight agent	10.0	0.0	40.0	0.0	45.0	5.0	20.0
34. Railroad terminal traffic manager	57.2	4.7	33.4	0.0	4.7	0.0	10.0
35. Traffic manager with large manufacturing concerns	55.0	5.0	40.0	0.0	0.0	0.0	10.0
36. Accountant, certified public	95.5	4.5	0.0	0.0	0.0	0.0	0.0
37. Accountant, cost	68.3	0.0	27.2	0.0	0.0	4.5	10.0
38. Advertising manager	68.3	4.5	22.7	0.0	4.5	0.0	10.0
39. Appraiser, public utility	63.5	4.5	27.2	0.0	4.5	0.0	10.0
40. Auditor	86.4	4.5	9.1	0.0	0.0	0.0	0.0

TABLE LVI—*Continued*

Occupations	Professions	Professions or Semiprofessions	Semiprofessions	Semiprofessions or Clerical Occupations	Clerical Occupations	Checked As on All Three Levels	Institutions in Which Semiprofessions Can Be Prepared For
	1	2	3	4	5	6	7
41. Bank officer	68.1	0.0	27.2	0.0	0.0	4.5	30.0
42. Chief order clerk with manufacturing company	4.5	0.0	27.2	4.5	63.7	0.0	10.0
43. Controller	65.0	5.0	30.0	0.0	0.0	0.0	0.0
44. Credit manager	58.0	4.5	31.8	0.0	4.5	0.0	30.0
45. Employment manager	73.0	4.5	22.8	0.0	0.0	0.0	10.0
46. Executive secretary of commercial organization	71.5	9.5	19.0	0.0	0.0	0.0	10.0
47. General manager of factory	61.9	4.7	28.5	0.0	4.7	0.0	40.0
48. General manager in transportation	72.7	4.5	22.7	0.0	0.0	0.0	30.0
49. General manager of public service company	77.2	4.5	18.2	0.0	0.0	0.0	10.0
50. Insurance company officials	66.6	0.0	28.5	0.0	0.0	0.0	30.0
51. Office manager with large manufacturing concern	68.2	9.2	22.7	0.0	0.0	0.0	40.0
52. Production manager with large manufacturing concern	76.0	4.7	14.3	0.0	4.7	0.0	10.0
53. Sales manager with large manufacturing concern	67.6	4.7	28.6	0.0	0.0	0.0	20.0
54. Bond salesman	57.1	4.7	19.0	4.7	9.5	4.7	20.0
55. Women's ready-to-wear sales person	9.1	0.0	18.4	4.5	68.2	0.0	10.0
56. Furniture and rugs sales person	9.1	0.0	18.4	4.5	68.2	0.0	20.0
57. Statistician	95.5	4.5	0.0	0.0	0.0	0.0	10.0

Are appropriate training opportunities at hand?—If the results of the balloting may be assumed to have anything of determinative value—and it may be questioned whether a more competent group of judges can be found than these leaders in their respective fields of training—we have undoubted evidence of the desirability of providing training for semiprofessions, and that, too, for a large number of them. Earlier portions of this chapter justified the conclusion that only occasionally are the necessary opportunities for training for these semiprofessions made available, and in most of these instances it is through external or supplementary agencies, not through standard legitimate channels. This conclusion is for the most part corroborated by the findings of another approach to the same question.

TABLE LVII

PERCENTAGE DISTRIBUTION OF JUDGMENTS OF FROM 60 TO 84 DEANS OR DIRECTORS OF COLLEGES OF ENGINEERING ON THE ALLOCATION OF OCCUPATIONAL LEVEL OF 104 SELECTED OCCUPATIONS IN ENGINEERING AND RELATED FIELDS

OCCUPATIONS	PROFESSIONS	PROFESSIONS OR SEMIPROFESSIONS	SEMIPROFESSIONS	SEMIPROFESSIONS OR ON TRADE LEVEL	ON TRADE LEVEL	CHECKED AS ON ALL THREE LEVELS	INSTITUTIONS IN WHICH SEMIPROFESSIONS CAN BE PREPARED FOR
	1	2	3	4	5	6	7
1. Architectural superintendent	22.8	3.8	67.1	1.3	5.1	0.0	20.5
2. Assayer, metal mine (analyst)	32.4	1.3	65.0	0.0	1.3	0.0	20.5
3. Cement tester	2.6	1.3	54.0	2.6	39.5	0.0	30.8
4. Chemical laboratory worker	6.5	0.0	57.2	3.2	29.9	1.3	36.0
5. General contractor in building trades	19.2	2.7	59.0	2.7	16.5	0.0	12.8
DRAFTSMAN							
6. In building trades	4.8	2.4	59.5	1.2	32.1	0.0	29.2
7. In civil engineer's office	8.7	1.2	72.5	0.0	17.5	0.0	69.3
8. Mechanical	10.8	3.6	71.2	0.0	15.7	0.0	59.0
9. Structural	12.3	3.7	69.2	2.5	12.3	0.0	53.9
10. Architectural	11.2	3.8	68.8	0.0	16.3	0.0	43.6
11. Sheet metal	1.2	2.5	71.6	0.0	24.4	0.0	33.4
12. Topographical	9.9	2.5	71.7	1.2	14.8	0.0	64.2
13. Marine and ship	15.0	1.3	71.5	0.0	12.5	0.0	20.5
14. Mine	5.3	1.3	79.0	0.0	14.4	0.0	25.7
ELECTRICIAN							
15. Load dispatcher in power plants	5.7	0.0	61.0	2.8	30.0	0.0	12.8
16. Estimator of electrical jobs	15.0	1.2	64.0	0.0	20.0	0.0	15.4
17. Inspector	5.2	1.3	64.4	0.0	28.9	0.0	23.1
18. Magneto and ignition expert	4.0	0.0	52.6	1.4	42.0	0.0	10.2
19. Estimator, structural steel	31.5	5.5	52.0	5.5	5.5	0.0	12.8
INSPECTOR							
20. Building	17.5	2.5	56.3	3.8	20.0	0.0	25.7
21. Plumbing	2.6	1.3	62.0	3.9	30.3	0.0	12.8
22. Sanitary	8.9	1.3	64.0	3.8	21.8	0.0	15.4
23. Of bridges	24.3	3.8	56.4	2.6	12.8	0.0	10.2
24. Boiler	7.6	1.3	64.6	5.1	21.5	0.0	17.9
25. Electrical	9.1	2.6	65.0	2.6	20.8	0.0	25.7
26. Locomotive	13.9	1.3	56.9	3.8	24.0	0.0	7.7
27. Metal mine	13.9	0.0	64.0	2.8	19.5	0.0	5.1
28. Railroad signal	13.5	0.0	62.2	1.4	23.0	0.0	5.1
29. Miller, head	4.5	1.5	67.3	3.0	23.8	0.0	5.1
30. Mill man, ore dressing	6.4	1.6	52.5	4.8	35.0	0.0	7.7
31. Mineral surveyor	35.7	2.8	57.2	2.8	1.4	0.0	12.8
SUPERINTENDENT							
32. Of construction in building trades	24.7	7.8	59.9	0.0	7.8	0.0	15.3
33. Of machine shop	31.2	2.6	57.2	0.0	7.8	1.3	20.5
34. Of textile mill	38.5	1.4	52.9	0.0	7.2	0.0	2.6
35. Of flour mill	21.5	3.1	58.5	1.5	15.4	0.0	5.1
36. Mine or quarry	32.0	2.8	50.0	2.8	10.5	0.0	0.0
SURVEYOR							
37. General land	36.6	5.1	57.0	0.0	1.3	0.0	61.5

TABLE LVII—*Continued*

Occupations	Professions	Professions or Semiprofessions	Semiprofessions	Semiprofessions or on Trade Level	On Trade Level	Checked As on All Three Levels	Institutions in Which Semiprofessions Can Be Prepared For
Surveyor—*Continued*	1	2	3	4	5	6	7
38. Highway	38.5	5.1	55.0	0.0	1.3	0.0	59.0
39. Instrument man	17.7	3.8	73.4	0.0	5.1	0.0	74.5
40. Mine	34.7	5.3	58.6	0.0	1.3	0.0	41.0
41. Railroad	35.5	6.6	55.3	1.3	1.3	0.0	43.5
42. Topographer	33.8	6.5	57.5	1.2	1.2	0.0	51.4
43. Wire chief, telephone	12.5	0.0	70.9	2.8	13.9	0.0	17.9
44. Subcontractor in building trades	2.5	0.0	40.6	4.9	52.0	0.0	15.4
45. Designer, machine or tool	53.7	1.2	38.8	2.5	3.7	0.0	12.8
46. District plant chief, telephone	34.2	2.5	48.0	1.3	13.9	0.0	17.9
Electrician							
47. In electric power station	9.1	0.0	35.0	5.2	50.6	0.0	25.7
48. Distribution engineer with power plant	51.4	1.3	42.1	0.0	5.3	0.0	10.2
49. Ship	9.3	0.0	46.6	0.0	44.0	0.0	2.6
50. Switchboard	8.3	1.4	41.1	0.0	49.3	0.0	12.8
51. Storage battery expert	9.4	1.3	46.7	1.3	41.4	0.0	7.7
52. Plant, factory, or mill	9.4	1.3	49.3	0.0	40.0	0.0	7.7
53. Crane expert	9.2	0.0	38.1	1.3	47.4	0.0	2.6
Engineer							
54. Switchboard	48.6	3.9	37.8	0.0	10.5	0.0	12.8
55. Outside construction, telephone	42.3	3.8	35.0	3.8	14.1	0.0	17.9
56. Assistant, with field party	28.8	3.7	48.6	1.2	17.5	0.0	33.4
57. Millwright, general	4.3	1.4	44.3	10.0	40.0	0.0	5.1
58. Mine captain, metal mine	3.3	3.3	48.4	5.0	40.0	0.0	5.1
59. Mine ventilating expert	49.4	7.1	36.6	0.0	7.1	0.0	2.6
60. Sampler, ore	3.0	0.0	38.8	1.5	57.0	0.0	7.7
61. Signal supervisor, railroad	14.9	4.5	46.3	1.5	32.8	0.0	12.8
Superintendent							
62. With gas and electric companies	48.2	2.5	44.3	0.0	5.1	0.0	2.6
63. Of telephone company	46.1	2.6	46.1	0.0	5.3	0.0	10.2
64. Of iron or steel works	54.0	5.1	36.0	0.0	5.1	0.0	5.1
65. Woods, logging	10.0	1.4	47.2	4.3	37.2	0.0	2.6
66. Appraisers, public utility	72.5	1.3	23.7	0.0	2.6	0.0	10.3
67. Architectural designer	79.2	1.2	18.3	0.0	1.2	0.0	10.3
Chemist							
68. Food analyst	75.6	3.8	20.5	0.0	0.0	0.0	15.4
69. Paint mill	66.7	1.2	30.9	0.0	1.2	0.0	25.7
70. Metallurgical	79.5	1.3	19.2	0.0	0.0	0.0	7.7
71. With gas and electric companies	67.6	2.7	29.8	0.0	0.0	0.0	20.5
72. Flour mill	63.5	2.5	31.6	0.0	1.3	0.0	17.9
73. Paper mill	56.5	1.3	30.3	11.8	0.0	0.0	17.9
Engineer							
74. Maintenance of way	77.4	1.3	17.7	0.0	3.8	0.0	2.6
75. Equipment, telephone	66.7	5.1	23.0	0.0	5.1	0.0	2.6
76. Construction, or erection	59.0	5.1	30.8	0.0	5.1	0.0	7.7
77. Testing, with electric manufacturing company	59.5	6.3	30.4	0.0	3.8	0.0	10.2

TABLE LVII—*Continued*

Occupations	Professions	Professions or Semiprofessions	Semiprofessions	Semiprofessions or on Trade Level	On Trade Level	Checked As on All Three Levels	Institutions in Which Semiprofessions Can Be Prepared For
Engineer—*Continued*	1	2	3	4	5	6	7
78. Erecting, with electric manufacturing company	55.7	5.1	29.1	1.3	8.9	0.0	12.8
79. Designing, with electric manufacturing company	88.7	2.5	6.3	1.2	1.2	0.0	0.0
80. Marine	86.0	0.0	9.9	1.4	2.8	0.0	2.6
81. Sanitary	93.5	1.3	3.8	1.3	0.0	0.0	0.0
82. Heating and ventilating	86.0	3.8	8.9	1.3	0.0	0.0	2.6
83. Structural	92.4	1.3	5.1	1.3	0.0	0.0	0.0
84. Highway	88.8	2.5	7.6	1.3	0.0	0.0	7.7
85. Concrete	88.7	2.5	7.5	1.2	0.0	0.0	0.0
86. Bridge	93.6	1.3	3.8	1.3	0.0	0.0	0.0
87. Railroad construction	88.7	2.5	7.6	1.3	0.0	0.0	5.1
88. Railroad division	86.0	1.3	11.5	1.3	0.0	0.0	2.6
89. Automobile, consulting or designing	90.0	1.3	7.6	1.3	0.0	0.0	0.0
90. Operating, power plant	59.1	6.2	29.6	2.5	1.2	1.2	15.4
91. Refrigeration	83.8	3.7	10.0	1.3	0.0	1.3	5.1
92. Manager, mine	60.6	3.9	31.6	0.0	3.9	0.0	2.6
93. Master mechanic with railroad shops	50.0	6.7	31.1	1.4	10.8	0.0	2.6
94. Meteorologist	69.3	6.7	22.6	0.0	1.3	0.0	0.0
95. Airplane mechanic	1.2	0.0	23.8	1.2	73.9	0.0	7.7
96. Dispatcher, train	0.0	1.3	27.2	2.6	69.0	0.0	2.6
97. Electrical armature winder	1.3	0.0	30.2	1.3	67.0	0.0	2.6
Engineman							
98. Marine	1.3	1.3	30.3	7.6	59.5	0.0	0.0
99. Refrigeration	0.0	1.3	29.1	7.6	62.0	0.0	5.1
100. Stationary, steam	0.0	0.0	27.3	6.5	66.2	0.0	10.2
101. Pipe layer, trench, foreman	0.0	0.0	8.4	5.6	86.2	0.0	0.0
102. Roadmaster, railroad	4.3	2.8	27.2	2.8	63.0	0.0	10.2
103. Rodman (surveyor's assistant)	1.4	0.0	29.7	2.7	66.2	0.0	28.2
104. Shift boss, metal mine	3.1	1.5	17.2	3.1	75.0	0.0	0.0

At the conclusion of each of the check sheets sent out to deans and heads of departments was appended this direction: "Underscore those occupations you have listed as semiprofessions for which a student might gain essential preparation by approximately two years' training in your college." It seemed certain upon examining the returned questionnaires that many who had complied with the major request did not act upon this latter direction. The procedure in tabulation was, therefore, to examine all the questionnaires with their accompanying remarks, and count the number which showed any evidence that the request to underscore had been observed. The count revealed recognition of the request by ten of the experts in commerce, thirty-nine in engineering, and ten in agriculture.

TABLE LVIII

PERCENTAGE DISTRIBUTION OF JUDGMENTS OF FROM 29 TO 36 DEANS OR DIRECTORS OF COLLEGES OF AGRICULTURE ON THE ALLOCATION OF OCCUPATIONAL LEVEL OF 48 SELECTED OCCUPATIONS IN AGRICULTURE OR RELATED FIELDS (INCLUDING FORESTRY)

OCCUPATIONS	PROFESSIONS	PROFESSIONS OR SEMIPROFESSIONS	SEMIPROFESSIONS	SEMIPROFESSIONS OR ON TRADE LEVEL	ON TRADE LEVEL	CHECKED AS ON ALL THREE LEVELS	INSTITUTIONS IN WHICH SEMIPROFESSIONS CAN BE PREPARED FOR
	1	2	3	4	5	6	7
1. Vegetable foreman on truck farm	8.9	0.0	50.0	2.9	38.2	0.0	40.0
2. Florist	22.8	8.6	51.5	2.8	11.4	2.8	30.0
3. Forest ranger	35.4	5.9	56.0	0.0	2.9	0.0	40.0
4. Lumber salesman	0.0	0.0	50.0	3.3	46.7	0.0	20.0
5. Woods superintendent	6.1	0.0	51.5	3.0	39.4	0.0	10.0
6. Manager of butter factory	23.5	8.8	53.0	2.9	11.7	0.0	80.0
7. Manager of cheese factory	25.6	8.5	51.5	2.8	11.4	0.0	80.0
8. Buttermaker	2.8	0.0	54.4	5.7	37.2	0.0	80.0
9. Cheesemaker	2.8	0.0	54.4	5.7	37.2	0.0	60.0
10. Ice cream maker	2.8	0.0	51.4	5.7	40.0	0.0	60.0
11. Pasteurizing plant foreman	5.7	0.0	60.0	2.8	31.4	0.0	60.0
12. Tester for cow-testing association	2.9	5.8	67.6	2.9	20.6	0.0	70.0
13. Beekeeper	5.9	0.0	38.2	8.8	47.0	0.0	40.0
14. Poultryman	17.1	0.0	43.0	11.4	25.7	2.8	60.0
15. Tractor service man or salesman	8.9	5.8	35.2	5.8	44.2	0.0	40.0
16. Vegetable buyer for cannery	5.8	0.0	41.2	5.8	47.0	0.0	30.0
17. Gardner, truck	15.6	0.0	34.2	6.2	43.8	0.0	60.0
18. Manager or owner-operator of fruit farm	39.4	3.0	39.4	9.1	9.1	0.0	10.0
IN NURSERY BUSINESS							
19. General nurseryman	26.5	2.9	38.3	5.8	26.5	0.0	40.0
20. Propagator	11.4	2.8	48.5	2.8	34.3	0.0	40.0
21. Field foreman	5.6	0.0	38.9	2.8	52.9	0.0	40.0
22. Salesman	5.8	2.9	38.2	0.0	53.0	0.0	30.0
23. Nursery or orchard inspector	58.0	0.0	38.2	0.0	2.9	0.0	40.0
24. Park superintendent	39.4	6.1	42.5	0.0	12.1	0.0	0.0
25. Lumber yard superintendent	3.3	0.0	33.4	3.3	60.0	0.0	0.0
26. Lumber mill superintendent	6.7	0.0	36.6	6.7	50.0	0.0	0.0
27. Cruiser	3.2	0.0	48.4	0.0	48.4	0.0	20.0
28. Farm manager in general farming	30.3	18.2	36.4	3.3	12.2	0.0	50.0
29. Farm owner-operator in general farming	33.3	10.0	40.0	0.0	13.3	0.0	30.0
MANAGER OF FARM DEVOTED TO:							
30. Milk production	30.3	6.1	48.5	3.0	12.1	0.0	40.0
31. Purebred livestock	51.5	6.1	33.4	6.1	3.0	0.0	30.0
32. Herdsman	6.0	3.0	42.5	15.1	33.4	0.0	80.0
33. Manager of milk distributing plant	37.2	8.6	37.2	0.0	17.1	0.0	70.0
34. Manager of ice cream factory	22.8	11.4	48.5	2.8	14.3	0.0	80.0
35. Condensed milk expert	44.9	6.9	34.5	3.4	10.3	0.0	10.0
36. Supervisor of advanced registry tests	39.4	3.0	39.4	3.0	15.1	0.0	40.0
37. Salesman for dairy supplies and machinery	21.2	3.0	36.3	9.1	30.0	0.0	20.0
38. Gardener, market	17.6	0.0	29.0	5.8	47.0	0.0	60.0

TABLE LVIII—*Continued*

Occupations	Professions	Professions or Semiprofessions	Semiprofessions	Semiprofessions or on Trade Level	On Trade Level	Checked As on All Three Levels	Institutions in Which Semiprofessions Can Be Prepared For
	1	2	3	4	5	6	7
39. Landscape gardener	71.5	2.8	14.3	2.8	8.6	0.0	10.0
40. Plant breeder (with seed companies)	85.7	0.0	11.4	0.0	2.8	0.0	10.0
State Experimenter In							
41. Pomology	97.5	0.0	0.0	0.0	2.5	0.0	0.0
42. Olericulture	94.5	0.0	2.7	0.0	2.7	0.0	10.0
43. Plant-breeding	97.2	0.0	0.0	0.0	2.7	0.0	10.0
44. Forest assistants engaged in special lines of work	54.3	5.7	31.4	2.8	5.7	0.0	0.0
45. City forester	65.6	5.7	25.7	0.0	2.8	0.0	10.0
46. City milk inspector	54.4	11.4	25.9	0.0	8.6	0.0	10.0
47. Bacteriologist, city and state board of health control	94.6	2.7	0.0	0.0	2.7	0.0	10.0
48. Manager of co-operative marketing organization	79.5	2.9	14.7	0.0	2.9	0.0	20.0

Using these figures as totals the percentages of those numbers who underscored each occupation were figured for each group and these percentages placed in column 7 of Tables LVI, LVII, and LVIII.

For the possible semiprofessions in Tables LVI and LVII in only a small proportion of instances are the percentages large. They run somewhat larger for Table LVIII. In estimating the significance of these percentages there should be some consideration of the fact that many of them would have been reduced if in the base on which they were computed could have been included those who would not desire to have their institutions essay such semiprofessional training. Thus, for instance, although seven, or seventy per cent, of those who underscored *any* occupations in the list in Table LVI seem to believe that "a student might gain essential preparation" for the work of commercial broker (Number 1) "by approximately two years' training" in their institutions, this is less than a third of the total number of experts from whom answers came in.

It is necessary also to couple with this situation the facts concerning the proportion of special occupational work prescribed during the first two years of professional or preprofessional curricula, as was shown in Chapter IV (Tables XXIV and XXV). This means that in many institutions if the student endeavored to secure the requisite preparation for a semiprofession, assuming that he had decided upon his occupational goal and knew the rela-

tion of the courses to its attainment, he would need to get administrative approval for this deviation from the regular curricular channels. Add to this the student's almost certain distaste for entering upon an irregular and shortened program in an institution in its nature emphasizing curricula at least four years in length, and you have a situation which affords little or no hope of doing much toward training for these semiprofessions in standard colleges and universities.

On the other hand these figures indicate that at least *some* of the materials in the first two years of professional and preprofessional curricula are pertinent for semiprofessional training. Certain other materials now typically in more advanced years could, through abbreviation and partial simplification, be lowered to the underclassman level, and, if introduced as culminal training in junior colleges, would serve to train for occupations on this intermediate level. If these special occupational materials in early professional or preprofessional years and the shortened and depressed courses referred to are offered in strong junior college units, there is little occasion for doubting that most essential semiprofessional training would be afforded and, with proper guidance, both the individual student and society would thereby be more effectively served.

IV. Other Possible Lines for Semiprofessions

Other lines suggested as semiprofessions.—Additional occupations found in the canvass reported upon in earlier portions of this chapter to have some justification for regarding them as on the semiprofessional level, are here listed. As those in any single line were few in number and rather miscellaneous, it was not feasible to secure a composite picture of expert opinions concerning their level as in the case of the three groups just described. Some of these at least may be expected ultimately to take their places among the list of semiprofessions.

Home Economics
- Cafeteria manager
  - Commercial
  - Institutional
  - Industrial
- Dietitian
- Professional shopper

Art
- Art glass workers
  - Designers
  - Cutters
  - Painters of stained glass
- Decorative modelers
- Designers
  - Costume
  - Commercial
  - In jewelry-manufacturing
  - Stage
- Engraver
  - In jewelry-manufacturing
  - In lithography
  - In photo-engraving
- Illustrator, commercial
- Interior decorator
- Map maker

MISCELLANEOUS

Chiropodist
Dental mechanic
Veterinarian
Masseur
Nurse
Pharmacist
Teacher
  Of elemenary schools
  Of drawing and craft work
  Of industrial arts
  Of physical education
Welfare supervisor or worker
Musician

Training in home-making on the semiprofessional level.—Because courses in home economics of a more or less terminal character are often proposed for junior college years a word should be said concerning them and the desirability of regarding home-making as a semiprofession. Without doubt this occupation, for which almost all women are destined, is one of those for which training on the strictly professional level as here defined, is none too much. In this sense as well as in the sense also which admits that the period of training involved is only one, but withal, an important, element of raising one's life work to a level where it is professionally conceived and accomplished, it is probable that home-making may be made as much of a profession as any that can be named. From the standpoint, however of the most extended period of training which is practicable for many, it is desirable to administer courses in this field for a large proportion of young women as if this occupation is to be for them a semiprofession, that is, by giving these courses as culminal training in junior college years. Fortunately, as noted in Chapter III, this is one of the fields in which junior colleges have already made a good beginning. But the importance of the field justifies much greater recognition. This may be achieved in a manner much like that suggested for the three fields more extendedly dealt with in this chapter, viz., commerce, engineering and allied activities, and agriculture, which is to utilize those of the professional and preprofessional materials commonly finding place during the first two years above the high school which are valuable as culminal training and to depress and abbreviate the most valuable of the courses more frequently finding place in the upper years of four-year curricula.

V. THE MAJOR INFERENCES

The first large portion of the current chapter discloses outcroppings of provisions for training on the semiprofessional level. These provisions, although relatively infrequent and predominantly afforded as supplementary and external agencies of education, are sufficiently extensive to assure us of a need not adequately met by the more formal agencies. It is significant that, even in these early stages of junior college development while most of them are directing efforts primarily at doing effectively the first two years of college and university work, there should be a consciousness of this need expressed in actual offerings of a semiprofessional sort. The

second large portion gives substantial corroboration to the major finding of the first and indicates more specifically some of the lines of occupational service for which training on the semiprofessional level should—and can—be given.

The implications of the evidence seem not to support early and vigorous development of opportunities for semiprofessional training in standard higher institutions. While institutions affording professional education have been in existence for a long period, few have made efforts of the sort here being considered. It seems to be in the nature of institutions with curricula four or more years in length to have in mind exclusively those only who contemplate completion of the full range of work provided. Moreover, even if faculties in charge of these standard colleges could as a whole be brought to see the desirability of offering semiprofessional curricula, it may be doubted whether students could be induced to enroll in them. To students there would always be something in the nature of a stigma attached to aspiring to less than the highest available in an institution.

The logical place for the development of semiprofessional curricula seems to be the educational unit where the years in which the training is to be given are *terminal* years. This is the junior college. The authorities in charge will be more disposed to regard the provision of curricula concluding with the years of training for which they are responsible as a legitimate rôle of the junior college. To the student there will be less of what may seem to him a surrender of caste to enter upon curricula of an occupational sort terminating at the same point as those of other students who plan to transfer to higher institutions. Although something still remains to be done in high schools to elevate the commercial and other vocational curricula to the same honorific status in the minds of the student as that enjoyed by the college preparatory curriculum, there has been much improvement in this regard in recent years. By analogy we are justified in anticipating a similar growth in esteem of semiprofessional curricula—a growth much more rapid than in the professional schools with curricula four or more years in length.

Providing this training for semiprofessions in junior colleges has the support also of the most significant considerations drawn from the materials presented in Chapters VI and VII which deal with the problems of mental and economic democratization through the establishment of this new unit. Culminal occupational training in these years will comport well with the needs of those who, on account of moderate mental equipment, because of financial limitations, or for other reasons, should not or cannot continue their training on the higher level.

There are many unsolved problems in this field of semiprofessional training, e.g., just what lines of training will be found feasible in junior colleges generally or in particular communities, securing suitable teachers,

the financial responsibilities involved, etc. These will tend to retard development along right lines even in junior colleges, but the needs of individuals for the training under consideration and of society for the types of service to be rendered by those receiving it, may be accepted as an earnest of the enduring merit of the proposal as well as of the ultimate place of the opportunities for semiprofessional training in the junior college unit.

CHAPTER IX

THE JUNIOR COLLEGE AND HOME INFLUENCES DURING IMMATURITY

I. The Expectation

Among the claims made for the junior college which were reported in Chapter II is one touching the continuation of home influences during immaturity (Special Purpose 5). Reference to Table V and Figure 4 will show that this is one of the claims most frequently made by the friends of the movement. Those who put it forward have in mind primarily the conservation of the moral interests of the student during the earlier portions of his college period, while he is often still too young and too much in need of guidance to be thrust into what is sometimes regarded as the disorganizing social environment of the large college or university. They would urge that the student, although scholastically prepared for college work, still requires the stabilizing influence of frequent contact with the home. The local junior college, they contend, provides a solution of this serious problem.

There is no intent here to enter upon an extended discussion of the problem, or of a justification of the misgivings many friends and patrons of higher education entertain with reference to the moral dangers to the young student in his first years in college or university away from home. It will be assumed that the dangers are present to some extent, especially where large numbers of students attend institutions inadequately staffed for purposes of social and moral guidance. Probably very few will be inclined to scout the presence in such situations of at least some measure of moral hazard. The chief item of concern here need not be the presentation of evidence to prove or to deny the hazard as much as to show whether or not those whose sons and daughters attend higher institutions believe it exists and what effect that belief has upon college attendance.

II. Facts in Justification of the Expectation

The age of college freshmen.—Important preliminary considerations are the present age of college entrance and the question of whether that age is likely in the future to show much change in either direction. In a later chapter (XV) facts will be presented showing that the age of college entrants advanced from the earlier decades of the nineteenth century to its later portions—in Harvard a median advance of more than two years in the half century from 1830 to 1880. Between 1800 and the earlier year named there was some decline in the median age, which is explained by the relatively greater accessibility of opportunities for preparatory education after the passage of almost a third of a century. From 1880 until 1916 a

slight decline in age of Harvard freshmen is seen, three months in thirty-six years. This decline may have arisen from, among other causes, the more recent efforts to encourage the progress of talented children at faster than the normal rate.

When similar data were compiled for a mid-western state university of more recent establishment, as was done for Table LIX,[1] we find that there has been a more marked decline in the later period. Nevertheless, the ages of recent entrants are not widely different in the two institutions. The more rapid recent decline for the University of Minnesota may be owing to the rapid development of secondary school opportunities within the state, as there were almost twice the number of state high schools in the later than in the earlier year. It is unlikely that the age of freshmen will experience further notable decline without unforeseen modifications of practices in elementary and secondary schools.

The fact remains, however, that students are entering college long before social and moral maturity may be presumed to have arrived. For instance, the middle fifty per cent enter Minnesota when they are between seventeen years, nine months, and nineteen years, six months, of age. A fourth of the freshmen range in age from fifteen years to seventeen years, nine months. It would be surprising, indeed, if discerning parents with sons and daughters of these ages ready for college work, should not hesitate to risk them in attendance at higher institutions far removed from domestic influences.

Statements of parents with children in public junior colleges.—Near the opening of Chapter VII dealing with economic democratization of higher education by means of the junior college there was presented a digest of the responses of parents to a simple question designed to ascertain why their sons or daughters attended local public junior colleges rather than colleges or universities elsewhere. At that point, on account of its pertinence to problems under consideration, attention was directed in particular to the reason most frequently given for such attendance, the financial one. It is now appropriate to refer to the reason furnished by the second largest proportion of all the parents, in actual figures (see Table XLVIII) by 118, or 27.8 per cent of all reasons given, and by approximately three fifths of the total of 199 parents making some sort of response. This reason is the opportunity afforded by the local public junior college to extend the period of home influence over the early years of college attendance. For the parents of California, because they were probably thinking more about the usual long distances to the large universities in the state, and (on account of better financial status than that of parents in other sections) less about the expense involved, the proportion of responses falling under this head

[1] Not all freshmen in the University in the years concerned, but a randomly selected sample large enough to be determinative, are represented in the table.

exceeded even that for the economic reason. Extension of home influence looms with parents as a prominent consideration for establishing the local junior college.

TABLE LIX

MEDIANS, QUARTILES, AND RANGES OF AGES[a] OF FRESHMEN ENTERING THE UNIVERSITY OF MINNESOTA IN 1900 AND 1921

MEASURES OF TENDENCY	AGES IN YEARS AND MONTHS	
	1900 (460)	1921 (631)
First quartile	18-4	17-9
Median	19-3	18-6
Third quartile	20-9	19-6
Range	12-6 to 39	15 to 27-6

[a] For this and subsequent tables showing ages of students a procedure now accepted as standard has been followed, that of computing these ages as of September 1 of the year concerned. A student was tabulated as being eighteen years of age, e.g., if his eighteenth birthday fell within a six-month period of which September 1 is the midpoint, i.e., if it fell on any date from June 1 to November 30, inclusive.

The junior college actually serves in this way.—By means of a comparison of the ages of freshmen in public junior colleges with those of freshmen in the University of Minnesota it has been possible to ascertain whether or not the former type of unit is serving to extend home influences during attendance upon college work after the manner suggested. The results of the procedure of comparison are to be found in Table LX and Figure 32. The students in the University of Minnesota divided into the two groups, designated as (1) freshmen from outside the Twin Cities and suburbs and (2) freshmen from the Twin Cities and suburbs, are the same as those concerned in the second column of figures in Table LIX. This group includes freshmen entering the College of Science, Literature, and the Arts of the University in the fall of 1921, the first 631 in alphabetical arrangement. It appeared that 388 of these freshmen, 212 men and 176 women, came from Minneapolis, St. Paul, and suburban communities near enough to make possible daily trips coming and going to attend regular day sessions. This does not mean that they actually commuted, but merely that residence was near enough to make commutation possible. An inconsequential proportion of this group of students, as a matter of fact, reported residence in the suburban communities. The remaining 243 students, 167 men and 76 women, came from beyond commutable distances, i.e., they would all need to be away from home during the periods of attendance at the University. The grouping here made is intended to disclose the difference in ages, if any, between the group whom the University of Minnesota was serving as would a local junior college in making possible the continuation of the influence of the home, and the group who must leave home to attend.

TABLE LX

MEDIAN AND QUARTILE AGES OF (1) FRESHMEN IN THE UNIVERSITY OF MINNESOTA (a) FROM OUTSIDE THE TWIN CITIES AND SUBURBS, AND (b) FROM THE TWIN CITIES AND SUBURBS, AND (2) OF FRESHMEN IN PUBLIC JUNIOR COLLEGES, 1921

MEASURE OF TENDENCY	FRESHMEN FROM OUTSIDE TWIN CITIES AND SUBURBS			FRESHMEN FROM TWIN CITIES AND SUBURBS			FRESHMEN IN SIXTEEN PUBLIC JUNIOR COLLEGES		
	Men (167)	Women (76)	Total (243)	Men (212)	Women (176)	Total (388)	Men (386)	Women (331)	Total (699)
First quartile...	18-4	18-1	18-2	17-8	17- 5	17-6	17-9	17- 6	17-8
Median	19-1	18-8	19-0	18-5	18- 0	18-3	18-6	18- 2	18-4
Third quartile..	20-2	20-6	20-3	19-2	18-11	19-1	19-5	18-10	19-2

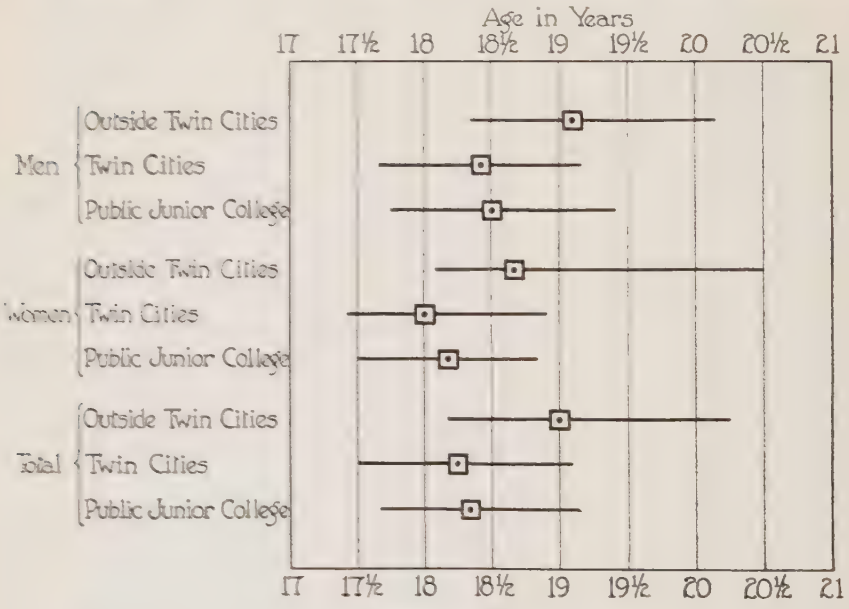

Figure 32

Ranges in age of the middle 50 per cent and median ages of (1) freshmen in the University of Minnesota (a) from outside the Twin Cities and suburbs and (b) from the Twin Cities and suburbs and (2) freshmen in public junior colleges (the squares locate the medians, the lengths of lines represent the ranges of the middle fifty per cent)

The measures of tendency, which are given in years and months of age in the table, show significant differences between the two groups, both by sex and for totals. For example, the median difference between men from outside and men from inside the Twin Cities is eight months—two thirds of a calendar year. There is the same difference for women and, therefore,

about the same for the sexes combined. The first quartiles show similar differences, while the third quartiles show the differences increased. It is clear that attendance away from home is undertaken at a later age than attendance where frequent contact with the home is possible.

The notable feature of the measures of tendency of ages of freshmen in sixteen public junior colleges is that they are almost identical with those for freshmen in the University of Minnesota whose residences are in the Twin Cities. This approach to identity takes on real significance for the question under consideration when it is called to mind that students in public junior colleges have been almost exclusively local. It leads to the conclusion that the public junior college where established tends to prevent delay in entering upon college work.

Similar measures of tendency for private junior colleges have been omitted because the data assembled for them are not strictly comparable. In the first place, because most of those visited were institutions for women, the number of men included is too small to be representative. In the second place, most of the private schools concerning whose students these data were collected and tabulated admit graduates of high schools in southern states where eleven-year rather than twelve-year public school systems are the rule. Despite this handicap, the median age of women for private junior colleges exceeds that for public junior colleges by 2.5 months. This difference, notwithstanding the handicap, must arise from the fact that the private junior colleges enroll much smaller proportions of students from the local community than do the units on public foundations.

Ages of seniors in high schools outside and inside the Twin Cities.—The question may be raised by the inquiring reader as to the qualifying effect upon conclusions drawn of any difference between the ages of high school students in large cities and in smaller communities that would account for the difference found between the ages of freshmen in the University of Minnesota from within and from without the Twin Cities. If there is a corresponding difference in ages of high school seniors, the facts presented would be without meaning here.

In order to answer this question Table LXI has been prepared. It compares by measures of tendency identical with those used in earlier tables the ages of seniors (1) in high schools of Minnesota[2] and (2) in Central High School, St. Paul. These lists of seniors, although not for the same year in both groups, were for the same month of the school year, October. The respective first quartiles and medians for the two groups show a close correspondence, approaching identity. The third quartiles are some distance apart, but in the direction opposite to that in which these measures for

[2] The data for this group of high school seniors from which the measures presented were computed were made available through the courtesy of Professor W. S. Miller, of the University of Minnesota.

"outside" and "inside" freshmen differ. There is no difference in Table LXI that will explain away the differences referred to in Table LX.

TABLE LXI

MEDIAN AND QUARTILE AGES OF SENIORS (1) IN HIGH SCHOOLS OF MINNESOTA OUTSIDE THE TWIN CITIES AND (2) IN CENTRAL HIGH SCHOOL, ST. PAUL

MEASURE OF TENDENCY	IN HIGH SCHOOLS OUTSIDE TWIN CITIES, 1920			IN CENTRAL HIGH SCHOOL, ST. PAUL, 1922		
	Boys (200)	Girls (394)	Total (594)	Boys (126)	Girls (170)	Total (296)
First quartile	17-1	16-11	16-11	16-11	16-10	16-10
Median	17-8	17- 6	17- 7	17- 8	17- 5	17- 6
Third quartile	18-4	18- 2	18- 2	18- 9	18- 7	18- 8

III. CONCLUSION

The main findings of this chapter are (1) that, even though there is no likelihood of immediate rapid decline in the age of students during the earlier years of their college courses, large proportions are so young as to justify discerning parents in their feelings of insecurity about the moral welfare of their sons and daughters in large colleges and universities inadequately staffed for social and moral guidance, (2) that large proportions of parents of students in junior colleges endorse the new unit because it does make possible the continuance of home influences during the first years of pursuit of college work and, (3) that this attitude is sufficiently general to influence markedly the age at which young people of both sexes enter upon college work. Moreover, (4) the presence in the local community of opportunities of higher education tends to lower the age at entrance as much as six to nine months, or, conversely, the absence of such opportunities tends to delay it by that long a period.

Not all this unfortunate loss of time is imputable to immaturity alone. Without question some of the delay is attributable to financial causes, as when a student intending to go to college remains out for a year to work and lay aside funds against the expense of subsequent attendance. There must even be other occasional causes for postponement of entrance upon college work. But there can be no reasonable doubt that immaturity and parents' fears of its consequences are a potent, if not the predominant, factor. In so far as this is so, the junior college will operate to remove the obstruction, and will make it possible for the home to exercise its conservative influences over a larger proportion of the period of social immaturity.

CHAPTER X

THE JUNIOR COLLEGE AND THE INDIVIDUAL STUDENT

I. Introductory

The assertion.—Another of the claims made on behalf of the junior college, as shown in Chapter II, is that this new unit is better designed than are the larger institutions to afford attention to the individual student. The assertion is made in the light of the fact that, enrolments being smaller, classes are not as large and the individual student is, therefore, not as likely to be lost sight of as he is in educational units with larger class registrations.

It was shown also in the earlier portions of Chapter VII that this is one of the four reasons most frequently given by parents for sending sons and daughters to local junior colleges rather than to higher institutions elsewhere. This explanation was found to include 47 of the total 423 reasons volunteered. As there were 199 parents responding, this means that it was a prominent influence in the minds of almost a fourth of all answering the question.

How this claim was studied.—Among others two methods of approach in scrutinizing the claim at once suggest themselves. The first of these would be to compute the number of students per instructor. This measure would be obtained by ascertaining the number of students enrolled in junior college years of any institution under consideration and dividing it by the number of full-time instructors assigned to classes in which these students were enrolled. To arrive at the number of full-time instructors in most institutions, it would have been necessary first to compute the fractional portion of the total instructional time devoted to work taken by students on the junior college level of many teachers giving the remainder of their time to students and classes on other levels—in junior colleges on the high school level, and in colleges and univerities on senior college level. This method, if used, would have necessitated response from a complete count of teachers in a given unit, with the classification of all students in each section. This requirement could have been and was readily met in many junior colleges because of the interest in the problem in those institutions, but it would have been almost impossible of accomplishment in colleges and universities where interest in the junior college movement is a subordinate matter. This method was therefore abandoned in favor of the one now to be described.

The method used, and the results of the use of which are reported in this chapter, was simply that of tabulating the size of classes on junior college level as reported by instructors appealed to in junior colleges, public and private, and in four-year colleges and universities. It is manifest that

in some respects this method is superior to the first one described, although something of value might have been added to the study by the use of both.

II. The Size of Classes in Junior Colleges, Colleges, and Universities

The institutions and numbers of instructors represented.—A total of 43 institutions is represented in the findings reported in this chapter. Of these 27 are junior colleges, 20 public, and 7 private; 14 are standard four-year colleges; and 2 are universities. Much of the material used for the junior colleges was collected by the investigator personally during his visits to those institutions, although some of it was supplied subsequently to these visits on blanks left with authorities in charge of the units. The data from colleges were secured by means of blanks of inquiry distributed on the request of the investigator by presidents of these institutions and sent on to him after having been filled out and returned to the presidents' offices. In the case of the universities the request was sent to heads of departments rather than to presidents. On account of the magnitude of the task involved, it was felt to be neither desirable nor necessary to secure a representation of all departments in the universities. Only departments of English, mathematics, chemistry, and history were appealed to for information, on the assumption that data from these would adequately represent the situation for the first two years of university work.

To save space the names of the junior colleges represented will not be given, but it may be said that the public institutions are located in eight, and the private in three, different states. The four-year colleges are Agnes Scott, Alma, Amherst, Bates, Cornell, De Pauw, Hillsdale, Lawrence, Park, Pomona, Puget Sound, Wellesley, Whitman, Willamette. They are located in eleven different states. The two universities are Stanford University and the University of Wisconsin, both of them, as are most of the colleges, wrestling with the problem of rapidly mounting enrolments.

A total of 430 different instructors is represented in the data gathered—138 in public, and 60 in private, junior colleges, 123 in four-year colleges—and 109 in the universities. This means that 198 were teachers in junior colleges and 232 in colleges and universities.

It should be noted in passing that the information here considered is only a small part of all that the instructors were asked to supply on the same sheets of inquiry, the remaining data being utilized in other portions of this investigation, notably in the studies of the training, experience, teaching load, and salaries of junior college and college and university teachers in Chapter XII. There seems no occasion for a misgiving that the data thus gathered touching the size of class differs in any important respect from those which would have followed a strict process of random sampling.

Distribution of classes by size in junior colleges and in four-year colleges and universities.—The first comparison afforded in the tables assembled is in the distribution by size of classes in the two main types of institution, the junior colleges as a group and the four-year colleges and universities as a group. The numbers and percentages of classes of each of the four sizes to which they have been distributed are shown in Table LXII. The striking difference in tendency in the respect under consideration becomes apparent as soon as one compares the percentages in the smallest and largest classes, i.e., 1-10 and over 30. The junior colleges show 30.6 per cent in the group of smallest classes, whereas the colleges and universities show approximately a fourth of this proportion. On the other hand, the junior colleges had but 11.6 per cent of classes enrolling more than 30, while the college and university group shows almost three times as large a proportion.

TABLE LXII

DISTRIBUTION OF CLASSES BY SIZE IN JUNIOR COLLEGES AND IN FOUR-YEAR COLLEGES AND UNIVERSITIES

SIZE OF CLASS	JUNIOR COLLEGES (27)		FOUR-YEAR COLLEGES AND UNIVERSITIES (16)	
	Number of Classes	Per Cent	Number of Classes	Per Cent
1-10	150	30.6	45	7.5
11-20	155	31.6	125	20.9
21-30	128	26.1	232	38.9
Over 30	57	11.6	195	32.7
TOTALS	490	99.9	597	100.0

A comparison of public junior colleges, private junior colleges, four-year colleges, and universities.—A similar distribution is afforded in Table LXIII for each of the four types of institutions when junior colleges are divided into the two groups of public and private and the other higher institutions are separated as four-year colleges and universities. The percentages for the first two groups show no notable differences, although there is a slight tendency in the group of private institutions here considered to a smaller percentage in classes of the smallest size (1-10) and to a larger percentage in classes of more than 30 students.

The essential difference between four-year colleges on the one hand and universities on the other is the larger percentage in the 21-30 division in the latter and the consequently smaller percentages in classes of smaller size. There is approximate equality of the percentages of classes of more than 30 students, the four-year colleges showing even a slightly greater proportion of these than the universities.

TABLE LXIII

DISTRIBUTION OF CLASSES BY SIZE IN PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, COLLEGES, AND UNIVERSITIES

SIZE OF CLASS	1. PUBLIC JUNIOR COLLEGES (20)		2. PRIVATE JUNIOR COLLEGES (7)		3. FOUR-YEAR COLLEGES (14)		4. UNIVERSITIES (2)	
	Number of Classes	Per Cent	Number of Classes	Per Cent	Number of Classes	Per Cent	Number of Classes	Per Cent
1-10	107	33.5	43	25.1	43	11.3	2	0.9
11-20	99	31.0	56	32.7	86	22.6	39	18.1
21-30	79	24.8	49	28.7	126	33.1	106	49.1
Over 30	34	10.7	23	13.5	126	33.1	69	31.9
TOTALS	319	100.0	171	100.0	381	100.1	216	100.0

The distributions for both the older types of higher institution show greater proportions of classes of more than 30 and smaller proportions of classes of 1-10 than do the junior colleges.

TABLE LXIV

DISTRIBUTION BY SIZE OF CLASSES IN EXCESS OF 30 STUDENTS IN FOUR-YEAR COLLEGES AND UNIVERSITIES

SIZE OF CLASS	NUMBER OF CLASSES IN	
	Four-Year Colleges	Universities
31- 40	62	17
41- 50	22	10
51- 60	25	8
61- 70	6	8
71- 80	3	2
81- 90	3	4
91-100	..	3
101-150	4	10
151-200	1	2
201-300	..	2
301-400	..	2
401-500	..	1
TOTALS	126	69

Distribution by size of the largest classes in colleges and universities.— In view of frequent current reference to the tendency to large classes in colleges and universities, some interest should attach to the distributions of their classes enrolling more than 30 students. These are shown in Table LXIV. They are not shown for junior colleges on account of their rela-

tively negligible proportion. In drawing conclusions from the table the reader should bear in mind that the total numbers shown are, respectively, 33.1 and 31.9 per cent of all four-year college and university classes represented.

There are distinct differences in the distribution of the large classes. Most of the large college classes cluster near the smaller of the divisions made. Nevertheless, very large classes are sometimes reported for this group of institutions. The large university classes show more of a tendency to distribute over the full range of divisions made. It should be made clear, however, that classes of the largest registrations of 60 or more students are not often taught exclusively in these large groups. Almost without exception in the university group, where such classes are seen to be more frequent, the work of such classes is administered by lecturing to them as a whole but breaking them up into quiz and discussion sections of manageable size for certain class periods each week. This practice, although it appears in the colleges, is not as frequent there.

Median and quartile numbers of students in these classes.—Another method of comparison of size of class which adds something to one's comprehension of the situation is afforded in Table LXV and Figure 33, which in effect show the medians and the ranges in size of the middle 50 per cent of the classes represented in the study. There is a conspicuous contrast between junior colleges on the one hand and other higher institutons on the other, but as is to be anticipated from what has already been presented, there is no marked difference between the two types of junior colleges nor between the colleges and the universities.

TABLE LXV

MEDIAN AND QUARTILE NUMBERS OF STUDENTS IN CLASSES IN PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, PUBLIC AND PRIVATE JUNIOR COLLEGES, FOUR-YEAR COLLEGES, UNIVERSITIES, AND IN FOUR-YEAR COLLEGES AND UNIVERSITIES COMBINED

MEASURES OF TENDENCY	PUBLIC JUNIOR COLLEGES	PRIVATE JUNIOR COLLEGES	PUBLIC AND PRIVATE JUNIOR COLLEGES	FOUR-YEAR COLLEGES	UNIVERSITIES	FOUR-YEAR COLLEGES AND UNIVERSITIES
First quartile	7.5	10.0	8.2	16.9	21.3	18.4
Median	15.4	17.7	16.2	24.9	26.4	25.6
Third quartile	24.3	26.1	24.9	35.1	39.3	35.9

An additional value to be derived from the highest measure of tendency provided in the table and figure, the third quartile, is the fact that it shows the size of class below which are included three fourths of all classes in each group of institutions. Since, even for four-year colleges and universities, these figures are no greater than 35.1 and 39.3, respectively, there is

some assurance that students even in universities are not predominantly placed in classes in which no extent of contact between instructor and the individual student is possible. At the same time, the first quartile measure indicates that some junior college classes are so small as to fail to afford the extent of emulation possible in class units of fair size.

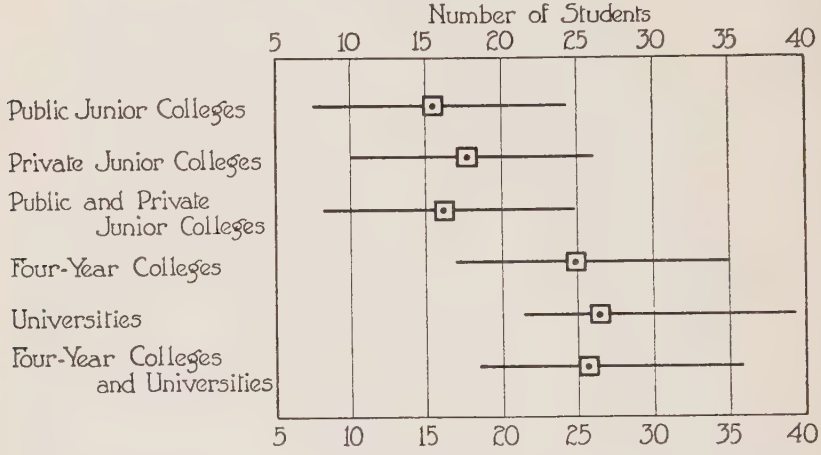

Figure 33

Median and quartile numbers of students in classes in public junior colleges, private junior colleges, public and private junior colleges, four-year colleges, universities, and four-year colleges and universities (the squares locate the medians, the lengths of lines represent the ranges of the middle 50 per cent)

Size of classes in small, medium, and large junior colleges.—Since, as was seen in Chapter I, junior colleges differ widely in total enrolments, and since the magnitude of these enrolments must have much influence on the size of class in any unit, special inquiry has been made on this point in order to note the size of enrolment in junior colleges at which the argument of small size of class begins to cease to apply. For this purpose, the 20 public junior colleges so far represented in this chapter were distributed into three groups including 11 "small," 7 "medium," and 2 "large" units. The small junior colleges here include those enrolling a total of 100 students or less; medium, from 100 to 200; large, over 200. Unfortunately the distribution of institutions is not even over the full range of size. The disability applies especially to the middle group, most of which enroll nearer 100 than 200 students. This makes the middle group not unlike the group of small units, and this similarity is reflected in the measures of size of class presented. Moreover, the fact that there are only two large junior colleges, one with 260 and the other with 657 students, detracts from the conclusiveness of the comparison at the upper end. However, as will be seen, this special inquiry

has much of meaning for the validity of the claim under consideration, the larger extent of individual attention possible in junior colleges.

Both the small and medium junior colleges are seen in Table LXVI to have large percentages of classes in the division of smallest classes, and small proportions of classes enrolling over 30 students. It is when the percentages for the large junior colleges are compared with them that one notes a marked difference in the distribution. In fact, a comparison of the percentages for this group of institutions with those for universities in Table LXIII, shows a rather remarkable similarity, although hardly an approach to identity.

TABLE LXVI

DISTRIBUTION OF CLASSES BY SIZE IN SMALL, MEDIUM, AND LARGE PUBLIC JUNIOR COLLEGES

SIZE OF CLASS	SMALL (11)		MEDIUM (6)		LARGE (2)		ALL PUBLIC JUNIOR COLLEGES (20)	
	Number of Classes	Per Cent	Number of Classes	Per Cent	Number of Classes	Per Cent	Number of Classes	Per Cent
1-10	62	45.3	44	39.6	1	1.4	107	33.5
11-20	49	35.8	29	26.1	21	29.6	99	31.0
21-30	21	15.3	26	23.4	32	45.1	79	24.8
Over 30	5	3.6	12	10.8	17	23.9	34	10.7
TOTALS	137	100.0	111	99.9	71	100.0	319	100.0

Further opportunity for comparison is afforded in Table LXVII and Figure 34, which show the medians and ranges of the middle 50 per cent for the three groups of junior colleges and for four-year colleges and universities. The first quartiles and medians for large junior colleges and for other higher institutions are seen not to be far apart. There is, however, an appreciable difference between the respective third quartiles.

TABLE LXVII

MEDIAN AND QUARTILE NUMBERS OF STUDENTS IN CLASSES IN SMALL, MEDIUM, AND LARGE PUBLIC JUNIOR COLLEGES AND IN FOUR-YEAR COLLEGES AND UNIVERSITIES

MEASURES OF TENDENCY	SMALL PUBLIC JUNIOR COLLEGES	MEDIUM PUBLIC JUNIOR COLLEGES	LARGE PUBLIC JUNIOR COLLEGES	FOUR-YEAR COLLEGES AND UNIVERSITIES
First quartile	5.6	6.4	18.1	18.4
Median	11.4	14.1	24.4	25.6
Third quartile	18.5	24.2	30.0	35.9

The evidence of other portions of this report, as is shown in Part V, and elsewhere, favors sizable rather than small junior college units. It is there recommended that the type to be fostered should seldom enroll less than 150 students and the preferable minimum should be in the vicinity of 200 or more. The meaning for the claim being considered is apparent: if recommendations of this sort are to be put in operation in the establishment of junior colleges, a good portion of the argument of a larger extent of individual attention because of smaller classes is removed. Certainly it cannot be accepted in the unqualified form in which it applies to the less desirable units enrolling less than 200 students. On the other hand, even in units of satisfactory size there would be something of validity to the claim. There would, moreover, be no occasion for the very large classes we have found to be in operation to some extent in colleges and universities.

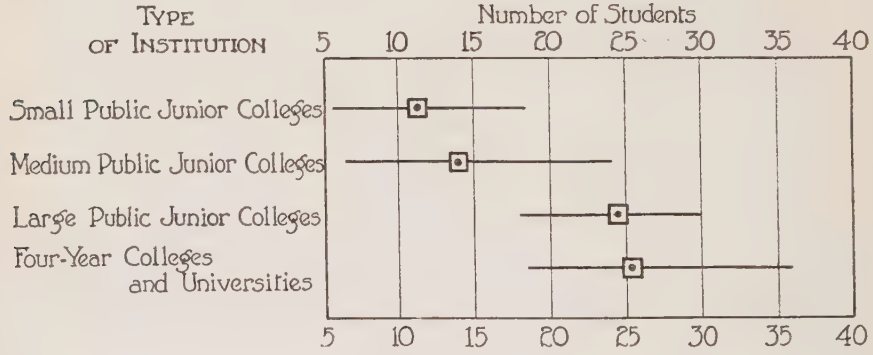

Figure 34

Median and quartile numbers of students in classes in small, medium, and large public junior colleges, and in four-year colleges and universities (the squares locate the medians, the lengths of lines represent the ranges of the middle 50 per cent)

III. The Influence of Large Institutional Registrations

The problem of attention to the individual student is not, however, solely a problem of the size of the classes to which he is assigned, however important this factor may be. It is in part a problem of sheer magnitude of the total enrolment of an institution. Even were all classes kept to teachable size, there must be a tendency toward loss of sight of the individual when enrolments mount as they have during the last third of a century. For example, in the University of Minnesota, the enrolment of freshmen increased from 254 in 1889-90 to 3053 during the autumn quarter of 1919-20. And for most of our higher institutions there have been similar, when not equivalent, increments. Despite efforts to have these large entering classes distributed to units of manageable size, which has not always been

possible, there must almost certainly follow the process designated by McConn[1] as the "depersonalization" of the process of higher education. Such a superfluity of students for facilities available must almost inevitably result in a temptation to prodigality in dealing with them, to a disparagement of the individual when the loss of a considerable number of students cannot affect appreciably the total number still remaining. As there is no prospect of early abatement in the growth of registrations, the elevation of the individual to a place where he is likely to have anything like adequate consideration, especially during the earlier years of the college course when this is still essential, seems to wait upon a reorganization of higher education which distributes the student body to smaller groups than is now the practice. This the general establishment of junior colleges would make possible.

IV. Epitome

The evidence presented concerning the size of classes in junior colleges and in four-year colleges and universities is to the effect that at present institutions of the former type have a distinct advantage. If, however, sizable junior college units only are fostered, the pertinence of the argument of more attention to the individual student because of smaller classes in junior colleges, will be to some extent reduced, since we have found that the sizes of classes in units of good size approach, even if they do not equal, those in other higher institutions. The argument, however, will doubtless always be in some part applicable.

But size of class itself does not comprehend all of the problems of attention to the individual student. The junior college, even if fostered only in sizable units, by merely reducing the total number of students in a single institution, will place a check on the process of depersonalization in higher education—a process which is encouraged by the mere fact of a large total registration—and it will do so during those college years when attention to the individual student is most imperative.

[1] Max McConn, The Freshman Flood. *Survey* 48: 299-305. May 27, 1922.

CHAPTER XI

THE JUNIOR COLLEGE AND TRAINING IN LEADERSHIP

I. The Claim and the Approaches in Investigating It

The problem.—It was indicated in Chapter II that among the aspirations entertained for the junior college is that it affords better opportunities than larger institutions like universities for experiences that constitute "laboratory work" in leadership. Although not often posited in the materials examined during the canvass for special purposes, its frequency of mention by friends of the small college in general—with which the junior college movement has some interests in common—warrants at least the brief study of the situation in this regard here reported.

How studied.—The information secured for the purposes of evaluating this claim was gathered in two ways. That concerning the existence of extra-curricular organizations in the junior colleges was collected by the investigator during his visits to these institutions. Inquiry was made of those in charge of junior college units. These data were not gathered for all institutions visited, but for a sufficiently large proportion of them to be indicative of the situation. Information concerning memberships and offices held was secured directly from students on the same blank of inquiry used to secure data on age, expenditures, etc., set forth in preceding chapters of this report. Not as many institutions are represented in this phase of the study, but the number of students is large enough to be determinative. Information concerning memberships and offices held was secured not only from junior college students, but from students enrolled in four-year colleges and in a state university.

II. The Extra-Curricular Organizations in Junior Colleges

The range of interest represented.—As the variety of extra-curricular organizations found in operation in junior colleges is very wide, it is advisable to report them with the grouping shown in Table LXVIII. The large divisions are seen to be athletic, literary, musical, and social and religious. Under these have been listed the particular interests represented by the organizations. While the classification as made is not without its incongruities, it will be helpful in securing something like a systematic conception of the nature and extent of types of organized activity going forward. All interpretations should be made while bearing in mind that the figures must include all degrees of effectiveness of functioning, from organizations with scarcely a spark of vitality to those at the other extreme, conducted with vigor, operating as important instruments of student self-education.

TABLE LXVIII

NUMBERS AND PERCENTAGES OF PUBLIC AND PRIVATE JUNIOR COLLEGES PROVIDING CERTAIN TYPES OF EXTRA-CURRICULAR ORGANIZATIONS

TYPES OF ORGANIZATION	PUBLIC JUNIOR COLLEGE		PRIVATE JUNIOR COLLEGE	
	Number	Per Cent	Number	Per Cent
ATHLETIC				
Basket-ball teams	16	100.0	22	84.6
Football teams	4	25.0	14	53.8
Baseball teams	5	31.3	13	50.0
Track teams	5	31.3	14	53.8
Hockey teams	5	31.3	4	15.4
Hiking clubs	6	37.5	6	23.1
Tennis clubs	13	81.3	10	38.5
Swimming team	6	37.5	3	11.5
Athletic association	5	25.0	..	...
Miscellaneous	5	31.3	2	7.7
LITERARY				
Literary society	11	68.8	8	30.8
Debate	1	6.3	8	30.8
Debating club	..	...	4	15.4
Dramatics	12	75.0	22	84.5
Oratory	1	6.3	2	7.7
Language clubs	10	62.5	20	76.9
School paper	7	43.8	15	57.7
Other publications[a]	11	68.8	14	53.8
History and related clubs	3	18.8	2	7.7
Science club	1	6.3	1	3.8
English and reading clubs	..	...	2	7.7
Miscellaneous	5	31.3	..	...
MUSICAL				
Choral society	5	31.3	3	11.5
Men's glee club	..	...	17	65.4
Women's glee club	9	56.3	15	57.7
Mixed glee club	1	6.3	2	7.7
Orchestra	9	56.3	16	61.5
Band	3	18.8	8	30.8
Miscellaneous	1	6.3	2	7.7
SOCIAL AND RELIGIOUS				
Y.M.C.A.	..	...	7	26.9
Y.W.C.A.	12	75.0	9	34.6
Fraternities	..	...	1	3.8
Sororities	5	31.3	2	7.7
Social clubs	7	43.8	7	26.9
Student council	3	18.8	10	38.5
Religious clubs	3	18.8	1	3.8
Women's league	..	...	2	7.7
Miscellaneous	1	6.3	3	11.5

[a] Usually the annual.

Space will not be taken to point out in detail the facts concerning the recognition of each type of extra-curricular organization named in the list. It is clear that these junior colleges, public and private, comprehend a wide variety and large number of such activities. It is pertinent to remark, however, that in some of the smaller junior colleges some of these organizations are maintained by the high school and the junior college student body combined. This does not happen as often in junior colleges of larger size.

A comparison of public and private junior colleges in this regard.—The distribution of the public, private, and all junior colleges represented as to the number of extra-curricular organizations maintained is to be seen in Table LXIX. Neither the distributions nor the average numbers of such organizations for junior colleges of the two types are widely divergent, although the private show a partial tendency to provide more of them than do the public.

TABLE LXIX

Distribution of Junior Colleges by the Number of Extra-Curricular Organizations Maintained

Number of Organizations	Public (26)	Private (16)	Total (42)
0	1	..	1
1– 4	1	..	1
5– 8	6	6	12
9–12	8	3	11
13–16	5	4	9
17–20	5	1	6
21–24	..	2	2
Average number of organizations	11.2	11.9	11.5

The influence of the size of the junior college upon the number of organizations.—The expectation that junior colleges with the larger enrolments will maintain larger numbers of organizations is borne out by Table LXX, which shows the average number classifying under each large division and in all divisions for public junior colleges when distributed to 3 groups as follows: 6 junior colleges with enrolments of less than 50 students, 11 with enrolments of 50 to 149, and 9 with enrolments of 150 or more. Each of the four divisions of activities shows an increase from the smallest to the largest junior colleges, an increase reflected in the averages at the foot of the table. The latter show a much larger increase between the second and third groups than between the first and second. This fact, from the standpoint of those who have confidence in the educational efficacy of well-conducted extra-curricular organizations, urges the establishment of junior colleges of good size, rather than small units with few such interests and small numbers of students participating.

TABLE LXX

AVERAGE NUMBER OF EACH MAJOR GROUP OF EXTRA-CURRICULAR ORGANIZATIONS IN PUBLIC JUNIOR COLLEGES WITH ENROLMENTS OF LESS THAN 50, 50 TO 149, AND 150 OR MORE

GROUP	ENROLMENTS OF		
	Less than 50 (6)	50 to 149 (11)	150 or More (9)
Athletic	2.5	3.1	4.3
Literary, etc.	2.7	3.6	4.7
Musical	2.0	2.0	3.2
Social, religious, etc.	1.3	1.3	2.2
All groups	8.5	10.0	14.4

III. STUDENT MEMBERSHIPS IN THESE ORGANIZATIONS

The distribution of students by frequency of memberships held in extra-curricular organizations is given in Table LXXI. Four groups of students are represented here, 995 in 15 public junior colleges, 680 in 7 private junior colleges, 227 in 3 standard four-year colleges, and 117 in a state university.

TABLE LXXI

DISTRIBUTION OF STUDENTS IN PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, FOUR-YEAR COLLEGES, AND A STATE UNIVERSITY BY THE NUMBER OF MEMBERSHIPS HELD IN EXTRA-CURRICULAR ORGANIZATIONS

NUMBER OF MEMBERSHIPS HELD	PUBLIC JUNIOR COLLEGES (15)		PRIVATE JUNIOR COLLEGES (7)		FOUR-YEAR COLLEGES (3)		STATE UNIVERSITY	
	Number (995)	Per Cent	Number (680)	Per Cent	Number (227)	Per Cent	Number (116)	Per Cent
0	222	22.3	54	7.9	16	7.0	36	31.0
1	192	19.3	108	15.9	33	14.5	22	19.0
2	204	20.5	104	15.3	47	20.7	25	21.6
3	169	17.0	134	19.8	47	20.7	14	12.1
4	100	10.1	99	14.6	29	12.8	3	2.6
5	49	4.9	65	9.6	25	11.0	7	6.0
6	34	3.4	41	6.0	16	7.0	1	0.9
7	8	0.8	28	4.1	3	1.3	6	5.1
8	13	1.3	18	2.6	6	2.6	1	0.9
9	3	0.3	9	1.3	1	0.4	..	..
10	..	..	11	1.6	1	0.4	1	0.9
11	1	0.1	2	0.3	2	0.9	..	..
12	..	..	5	0.7	..	..	..	..
13	..	..	..	..	..	..	..	..
14	..	..	1	0.1	1	0.4	..	..
15 and over	..	..	1	0.1	..	..	..	..
Average number held	2.2	..	3.4	..	3.2	..	2.0	..

The data for junior colleges concern both freshmen and sophomores, predominantly the former; those for the remaining higher institutions concern sophomores exclusively. This difference in classification of students would be likely, if it influences the results at all, to be unfavorable to the distribution in junior college groups.

The largest percentage of students holding no memberships is in the university group, where it attains almost a third. For the public junior college group the proportion is between a fifth and a fourth of all. It is almost equal in the two remaining groups, this extent of similarity perhaps having its explanation in the fact that almost all the private junior colleges were formerly institutions claiming to do full college work and that they have in consequence carried over similar tendencies with respect to extra-curricular activities. The remaining figures in the distributions of the respective columns bear out the expectations aroused by the first horizontal row of percentages just examined. The averages at the foot of the table, also, are in accord with these interpretations.

IV. Comparison of Office-Holding by Sophomores

Because laboratory training in leadership is afforded in directing these student affairs more than through mere membership in them, a better criterion by which to compare the institutions in the respect concerned is the extent to which students on the junior college level in the four groups represented hold office in these student organizations. Such a comparison is provided in Table LXXII, which gives the distribution of sophomores by the numbers of offices held, as well as the average number of offices per student for each group. The positions of responsibility in extra-curricular organizations reported by the students are the usual ones, e.g., presidencies, secretaryships, chairmanships, managerships, etc.

In this comparison larger proportions of sophomores in the four-year colleges and in the state university are seen to hold no office than in the junior colleges. The distributions in the columns and the average number of offices per student are consistent with the differences appearing in the first row of figures. The contrast has its explanation in the absence of upperclassmen in the junior colleges who in the other institutions are naturally elected to the positions of leadership, leaving few offices available for underclassmen. There are differences in each pair of types of institutions, for the junior colleges in favor of the private group, and in the two remaining in favor of the separate college.

TABLE LXXII

DISTRIBUTIONS OF SOPHOMORES IN PUBLIC JUNIOR COLLEGES, PRIVATE JUNIOR COLLEGES, FOUR-YEAR COLLEGES, AND A STATE UNIVERSITY BY THE NUMBER OF OFFICES HELD IN EXTRA-CURRICULAR ORGANIZATIONS

NUMBER OF OFFICES HELD	PUBLIC JUNIOR COLLEGES (276)		PRIVATE JUNIOR COLLEGES (260)		FOUR-YEAR COLLEGES (201)		STATE UNIVERSITY (117)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0	217	78.6	153	58.8	171	85.1	107	91.5
1	43	15.3	71	27.3	22	10.9	9	7.6
2	13	4.7	15	5.8	6	2.9	1	0.8
3	1	0.4	13	5.0	2	1.0	..	..
4	2	0.7	4	1.5	..	..	..	..
5	..	..	1	0.4	..	..	..	..
6	..	..	3	1.2	..	..	..	..
Average number of offices held	0.3	..	0.7	..	0.2	..	0.1	..

V. CONCLUSIONS

Inquiry into the extent to which extra-curricular organizations are in operation in junior colleges shows a wide range of interest already represented, with a somewhat greater numerical frequency in private than in public institutions. Larger units naturally provide greater possibilities in this direction than can those with small student registrations. In so far as these activities are to be regarded as legitimate instruments of training, this constitutes an added objection to the very small institutions many of which were found in Chapter I to be in existence.

Extent of student memberships in these organizations reaches its highest point in (1) private junior colleges, the three remaining types of institutions ranking in this respect in the order of (2) separate four-year colleges, (3) public junior colleges, and (4) a state university. As this comparison did not distinguish between freshmen and sophomores in the junior college units, although only sophomores were represented in the other institutions, one which did so would find these units in even a more favorable position than has been shown.

In the more critical comparison in the matter of office-holding by sophomores both types of junior colleges outdo the other types of higher institution, the contrast being attributable to the absence in the former of upperclassmen to whom the positions of responsibility would otherwise go.

There is no assumption by the writer that, in their present state of development and supervision, all types of extra-curricular organization are uniformly valuable means of training, either in leadership or otherwise. Without an acquaintance with what goes forward under many of these

names, mere numerical frequency can easily result in an exaggerated notion of their present value, both in junior colleges and in colleges and universities. Moreover, it is probable that with their longer standing and greater magnitude, the activities in the older types of institution are more frequently estimable instruments of education in leadership than those in the smaller newer units. The numerical data, nevertheless, assure us that, as these activities come in all types of institution to be administered with a view to their educational possibilities, the junior college will not lag behind its elder sisters in the family of educational institutions. In fact, the larger proportionate extent of office-holding in junior colleges owing to the absence of upperclassmen assures us that, as we attain the desired level of efficiency, students enrolled in them will have much more satisfactory conditions for laboratory work in leadership than will freshmen and sophomores in institutions in which upperclassmen naturally fall heir to the positions of responsibility.

CHAPTER XII

JUNIOR COLLEGE INSTRUCTION—I. PERSONNEL, TEACHING LOAD, AND REMUNERATION OF THE STAFF

I. The Problem and How It Was Explored

The problem and its importance.—As was stated in Chapter III where extended consideration was given the feasibility of offering in the junior college two years of work acceptable to colleges, there was implicit in that claim the belief that the work can be effectively and acceptably done in the new unit. A few of the sources drawn upon went farther than merely to imply it, as may be seen by reference to Purpose 8 described in Chapter II. Some of the friends of the junior college movement were disposed to contend that instruction in junior colleges will tend to be superior to that received by students in other higher institutions, the chief ground cited being a conviction that the more seasoned high school instructors selected for junior college work are more effective teachers than are the younger, less experienced instructors often employed in colleges and universities.

Whatever may be the merit of this particular contention, it was felt to be essential to the investigation of the movement as a whole that as complete and unbiased an inquiry into junior college instruction as could be made without sacrificing other essential portions of the inquiry should be included. It is platitudinous in the extreme to say that without the promise of effective teaching no educational unit can long justify its existence, and if junior college teaching shows no promise of becoming efficient to the degree at least of that afforded on this level by its predecessors in the field, there would be meager occasion to argue for the extension of the movement on other grounds. On this account, although surrounded on every hand with hampering perplexities, vigorous effort was made along several lines looking to an evaluation of the instructional situation in the junior college.

The main lines of inquiry.—Three chief methods were used in this portion of the investigation, first, a comparison as to training, experience, teaching load, and remuneration of junior college teachers with those giving instruction on the same level in colleges and universities; second, a comparison of instruction by means of a large amount of classroom visitation; and, third, a comparison of the efficiency of junior college graduates in their first year of work in universities and colleges subsequently attended with that of students who had completed their first two years of work in a university. The results of the first of these lines of approach are reported in the current chapter, those of the two remaining being given in the two chapters next following.

The instructors included in the comparison as to training, experience, teaching load, and remuneration.—For the most part the instructors represented in the comparisons are identical with those, data on whose classes were reported in Chapter X dealing with the junior college and the individual student. The numbers in each group are seldom the same as there given for the reason that instructors varied in the completeness with which they reported on all items of inquiry. Moreover, the groups into which the institutions have been divided for the purposes of this chapter differ somewhat, the group of private junior colleges being subdivided into "northern private" and "southern private, accredited." In addition, instructors in a small group of institutions indicated as "southern private, unaccredited," are occasionally to be found in the tables and with less frequency a small number of instructors in junior colleges maintained in connection with normal schools and teachers colleges and here designated as "normal school junior colleges."

The total number of instructors represented at one or more points in the data to follow is 601 distributed as follows: 189 in public junior colleges; 90 in private northern junior colleges; 25 in southern private junior colleges, accredited; 30 in southern private junior colleges, unaccredited; 25 in normal school junior colleges; 121 in four-year colleges; and 121 in universities. On the final item dealt with in this chapter, remuneration, there are data also concerning 728 high school teachers, 240 of these in high schools in districts maintaining junior colleges, and 488 in districts not maintaining junior colleges.

There are grounds for confidence in the representativeness of most of the materials used in this chapter. In the instances of many junior colleges answers of a full or almost full count of instructors were available. The counts were not nearly as complete for some of the colleges and for the two universities represented. A method of check upon the results of which report will be made in the next section of this chapter, however, assures the determinativeness of the findings for these groups. The numbers of instructors in southern private and normal school junior colleges included are too small to warrant much in the way of assurance of representativeness of tendencies noted. This will explain the omission of data for these groups from some of the tables and figures.

II. The Extent of Preparation

The highest degrees held.—One measure of the extent of preparation of an instructor, although a rough one, is the highest degree he holds. This has been ascertained for almost all of the groups represented and the numerical and percentage distributions are shown in Table LXXIII and Figure 35. For the purposes of this comparison teachers of special subjects

like home economics, art, music, and physical education have been omitted from the junior college groups because no data were at hand for teachers in these lines in colleges and universities.

TABLE LXXIII

NUMBERS AND PERCENTAGES OF INSTRUCTORS WITHOUT DEGREES, AND WITH THE BACHELORS', MASTERS', AND DOCTORS' DEGREES AS THE HIGHEST HELD

TYPE OF INSTITUTION	WITHOUT DEGREES		BACHELORS' DEGREES		MASTERS' DEGREES		DOCTORS' DEGREES	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Public junior colleges (163)	6	3.7	76	46.6	76	46.6	5[a]	3.1
Northern private junior colleges (75)	4	5.3	43	57.3	27	36.0	1	1.3
Southern private junior colleges—accredited (24)	2	8.3	12	50.0	10	41.7	..	..
Southern private junior colleges—unaccredited (30)	1	3.3	22	73.3	7	23.3	..	..
Four-year colleges (119)	..	..	28	23.5	58	48.7	33	27.7
Universities (121)	..	..	36	29.7	51	42.2	34[b]	28.1

[a] Two of these are J.D.'s.
[b] One of these is a J.D.

A small proportion of instructors in junior colleges are without degrees. These are for the most part teachers who have especially large amounts of preparation in the field taught, e.g., a small proportion of teachers of French. No college and university instructors were without degrees. The public and northern private junior colleges on the one hand and college and university instructors on the other in roughly equivalent proportions hold Masters' degrees as their highest degrees. There is, however, a striking difference between the percentages holding Bachelors' and Doctors' degrees. There are practically none in the latter group for junior colleges, the difference being almost balanced by the larger percentage of those holding Bachelors' degrees in the junior college groups. As between public and northern private junior colleges, the former have some extent of advantage.

A check on the representativeness of the college group.—Because the proportionate response from some of the colleges included in the study was small, there was an element of doubt as to the representativeness of the resulting data. As response was fully voluntary, it might be conjectured that there could easily be, e.g., either a smaller or larger percentage of

responses from those with larger amounts of training. In order to ascertain whether or not these data could be safely used in comparison, facts concerning highest degrees held were obtained from the colleges already represented by another approach. In this instance lists of all members of the teaching staff of these colleges were taken from their respective catalogues and the lists sent to the registrars with the request to indicate those of the list teaching courses taken by students of freshman and sophomore classification. Responses to these requests were made by registering officers in

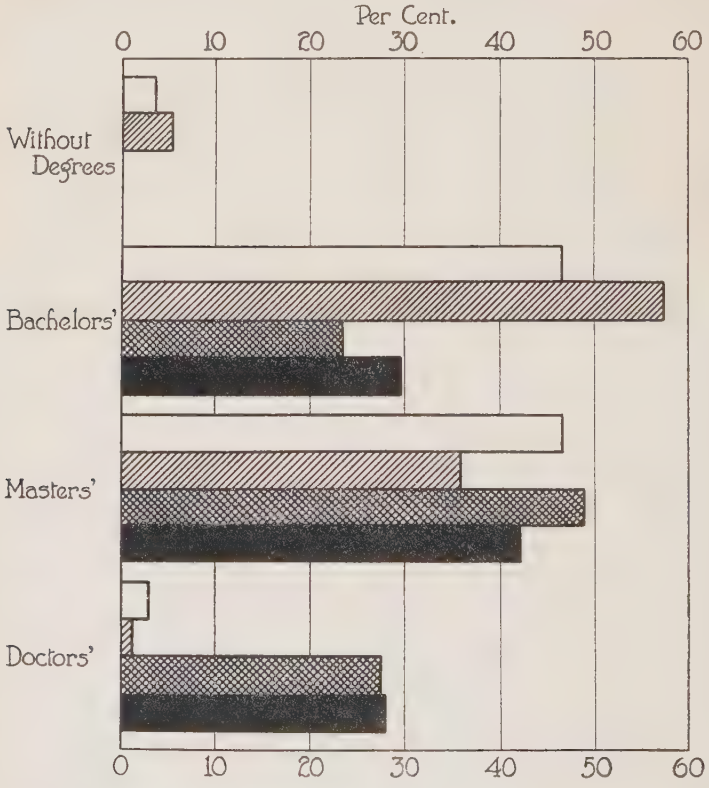

Figure 35

Percentages of instructors without degrees, and with Bachelors', Masters', and Doctors' degrees as the highest held (in outline, public junior colleges; single hatching, private junior colleges; crosshatching, four-year colleges; black, universities).

all but one of the colleges. A tabulation was then made of the highest degrees reported in the catalogues of these colleges for the 338 teachers thus indicated. The percentages resulting in this way were: without degrees, 3.5; Bachelors', 23.1; Masters', 41.1; and Doctors', 32.2. The distribution is so little different from that shown in Table LXXIII as to warrant acceptance of the data there as sufficiently representative to justify conclusions

from comparisons, not only with reference to the item of degrees, but in other items to be dealt with in the remaining portions of the chapter. It lends support to findings for other groups of instructors where numbers concerned are large enough to show tendencies.

Highest degrees held by college and university teachers giving instruction to freshmen and sophomores only.—A more nearly valid criterion for assisting in passing judgment on the satisfactoriness of the extent of preparation of junior college teachers is a comparison with respect to highest degrees held by those teachers in colleges and universities who teach work taken exclusively by students on the junior college level, i.e., by freshmen and sophomores, and who teach no courses taken characteristically by juniors and seniors. There were 22 such instructors in the college group and 65 in the university group. Of the college group 40.9 per cent held Bachelors' as their highest degrees, 40.9 per cent held Masters', and 18.2 per cent Doctors' degrees. Of the university group, 33.8 per cent held Bachelors', 55.4 Masters', and 10.8 Doctors' degrees. These distributions are seen to be much more nearly like that for public junior colleges, although still somewhat superior to it. They indicate that, when measured by the degrees held by this group of instructors only, the standards operative in higher institutions are less unattainable for junior colleges.

The institutions granting the graduate degrees.—A special tabulation, the results of which, to economize space, are not reproduced here, pertained to the types of institutions granting the graduate degrees represented. It may be said in summary of this line of inquiry that with a small proportion of exceptions in all groups they have been granted by institutions of the university type. The small remainder were granted for the most part by colleges and were almost always Masters' degrees.

High school and junior college teachers compared as to highest degrees held.—It would probably be granted without argument that for teachers in junior colleges the percentages holding advanced degrees are larger than for those in standard high schools. Nevertheless, to illustrate the extent of difference, some reference is here made to a study, recently completed by Hutson,[1] of the training of a large number of teachers in the high schools of Minnesota, a state which has for many years maintained relatively high standards of high school teacher preparation. This study shows that in the high schools with thirty or more teachers represented only ten per cent have advanced degrees, while in high schools with eleven to twenty-nine teachers only 3.1 per cent are so equipped. This study also shows, by citation from the results of an investigation made by Dean M. E. Haggerty, that almost all

[1] P. W. Hutson, Training of the High School Teachers of Minnesota. Master's thesis on file in the Graduate School of the University of Minnesota and as *Educational Monograph Series* No. 3, published by the College of Education.

teachers of academic subjects in the high schools of the state have been the recipients of Bachelors' degrees. These facts, compared with the percentages for junior colleges given in Table LXXIII, indicate that instructors in these new institutions, as measured by degrees held, constitute a selected group and that large proportions of them are well on their way from the typical level of training regarded as essential for high school teaching to that considered desirable for instruction on the collegiate level.

The number of years of training received.—A second measure of the total extent of preparation for teaching work in the institutions represented is the total number of years of training received by the instructors reporting. To make this measure possible all those co-operating were asked to indicate on one portion of the blank supplied the periods of undergraduate and graduate training they had had. Attendance during the regular school year was indicated by giving the period and the number of years, e.g., 1916-18 (2 years); summer sessions thus: 1916 (6 weeks). While the exact length of undergraduate and graduate residence was not always to be computed with certainty, most of the responses readily lent themselves to this use. From the distributions, not here reproduced, were computed medians and quartiles for each group, and these are presented in Table LXXIV and Figure 36. In referring to these the reader will be likely to find the significance more readily apparent by reducing, in his mind, the numbers of years shown by 4, the almost universal period of undergraduate training. Thus, e.g., the first quartile shown at the top of the first column of figures in the table means that the instructor there concerned had had one year of graduate training.

TABLE LXXIV

MEDIAN AND QUARTILE NUMBERS OF YEARS OF TRAINING BEYOND THE HIGH SCHOOL RECEIVED BY THOSE TEACHING IN JUNIOR COLLEGES AND IN JUNIOR COLLEGE YEARS OF FOUR-YEAR COLLEGES AND UNIVERSITIES

TYPE OF INSTITUTION	FIRST QUARTILE	MEDIAN	THIRD QUARTILE
Public junior colleges (177)	5.0	5.3	6.0
Northern private junior colleges (71)	4.3	4.9	5.4
Southern private junior colleges—accredited (24)	..	5.2	..
Southern private junior colleges—unaccredited (25)	..	4.4	..
Normal school junior colleges (21)	..	5.4	..
Four-year colleges (120)	5.3	6.5	8.1
Universities (121)	5.1	6.3	7.5

The measures shown in the table and figure are in harmony with the facts pertaining to highest degrees held, in that they indicate the superiority in extent of training of instructors in colleges and universities as compared with those in junior colleges, and in that instructors in public junior colleges are again seen to be somewhat better trained than those in northern private junior colleges. There appears also to be a slight extent of superiority of the university over the four-year college group.

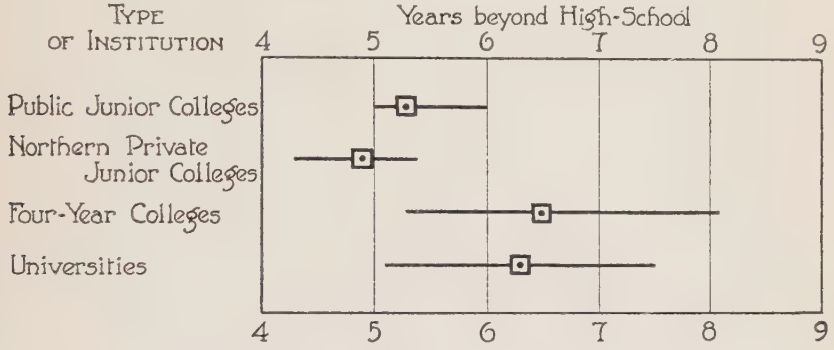

Figure 36

Median and quartile numbers of years of training beyond the high school received by those teaching in junior colleges and in junior college years of four-year colleges and universities (the squares locate the medians, the lengths of lines represent the ranges of the middle 50 per cent)

Number of years of training of college and university teachers giving instruction to freshmen and sophomores only.—It was deemed advisable here also, as in the instance of highest degrees held, to make some special study of those college and university instructors more nearly comparable with junior college instructors, i.e., those who are not giving instruction to upperclassmen, but to students on junior college level only. The median number of years of post high school training received by this group of college instructors is 5.4, approximately a year less than for the whole group of college instructors giving instruction to students in these years. The difference for university instructors is much less marked, as the median for those giving instruction to students in junior college years only is 6.0, whereas it is 6.3 for the whole group, as seen in Table LXXIV. The smaller difference for the university group is to be accounted for largely by the fact that some with considerable graduate training are part-time instructors satisfied with such a status in view of the possibilty of making further progress toward graduate degrees while teaching.

III. Special Preparation for Subjects Taught

Special preparation in the subjects taught.—The question of preparation for teaching in junior colleges is not, however, solely one of degrees held

or the extent in years of the period of preparation. It is also a question of special preparation in the fields in which a teacher is giving instruction. It was therefore essential to a full consideration of the problem to make some inquiry into the relation of work taken during periods of preparation to the work being taught by each instructor. The form on which instructors supplied the information necessary for this chapter called for, among other items, a list of all classes and courses taught, as well as for major and minor subjects pursued both during undergraduate and graduate periods of training. These two types of data were canvassed for each response made, with results as shown in Table LXXV and Figure 37. The first pair of columns of figures in the former report the numbers and percentages of instructors in each of the groups of institutions represented whose teaching work lay entirely in fields in which they reported having had the equivalent of undergraduate majors of training or more. In the work of tabulation, all instructors were counted as belonging under this head who reported (a) undergraduate majors, (b) graduate majors, (c) a combination of undergraduate and graduate majors, or (d) a combination of undergraduate and graduate minors in the subjects they were teaching. There is no assumption here that all of these several amounts are to be regarded as adequate preparation, it being desired merely to arrive at a common basis for comparison of the groups of instructors represented. It may be said, however, that an adequate amount of preparation in the subjects taught could hardly be less than the smaller of the preparations named, that is the undergraduate major only, or the combination of undergraduate and graduate minors. It must be admitted that "majors" and "minors" represent varying amounts of work and that the variation is especially large when some report for Doctors' and others for Masters' degrees both granted and in prospect. Despite the difficulties involved, the comparison afforded is not without significance in a study of the possibilities and limitations of junior college instruction.

Approximately three fourths of public and northern private junior college teachers are seen to have had the amounts of training named for the subjects they are teaching, the remainder having had less for a part or all of their teaching work. This proportion mounts to six sevenths for instructors in four-year colleges, and to practically all of the instructors in universities. The proportion leaves something still to be hoped for in the training not only of teachers in the new unit, but also in our four-year colleges, although the latter are at some advantage over the former.

Number of different departments in which teachers give instruction.—A phase of the problem of securing adequate preparation in subjects taught is the number of different fields in which a teacher is required to give instruction. The distribution for each of the several groups of instructors is shown in Table LXXVI. In arriving at the distribution as presented the usual

classification of departments in colleges and universities was followed. French and Spanish were regarded as two departments and not the single department of Romance languages. It is seen that approximately three fifths of the instructors in public and northern private junior colleges teach in one department only, something more than a fourth teaching in two, with small percentages giving instruction in more. In four-year colleges the proportion teaching in a single department rises to three fourths, with something more than a fifth teaching in two departments. University instructors teach exclusively in a single department. It appears that the junior college is not the only type of institution in which instructors must carry work in more than one department, standard colleges also struggling with the problem of a spread of the instructors' work.

TABLE LXXV

NUMBERS AND PERCENTAGES OF INSTRUCTORS IN JUNIOR COLLEGES, IN FOUR-YEAR COLLEGES, AND IN UNIVERSITIES (1) HAVING UNDERGRADUATE MAJORS OR MORE TRAINING IN THE FIELDS IN WHICH THEY ARE TEACHING, (2) HAVING UNDERGRADUATE MAJORS OR MORE IN PART OF THE WORK AND LESS IN THE REMAINDER, AND (3) HAVING LESS THAN UNDERGRADUATE MAJORS IN ALL WORK TAUGHT

TYPE OF INSTITUTION	(1) UNDERGRADUATE MAJORS OR MORE IN FIELDS TAUGHT		(2) UNDERGRADUATE MAJORS OR MORE FOR PART OF WORK, LESS FOR REMAINDER		(3) LESS THAN UNDERGRADUATE MAJORS FOR ALL WORK	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Public junior colleges (179)	134	74.8	22	12.4	23	12.8
Northern private junior colleges (80)	58	72.5	12	15.0	10	12.5
Southern private junior colleges—accredited (15)	12	80.0	2	13.3	1	6.7
Southern private junior colleges—unaccredited (27)	19	70.4	1	3.7	7	25.9
Four-year colleges (117)	101	86.3	7	6.0	9	7.7
Universities (118)	116	98.3	..	..	2	1.7

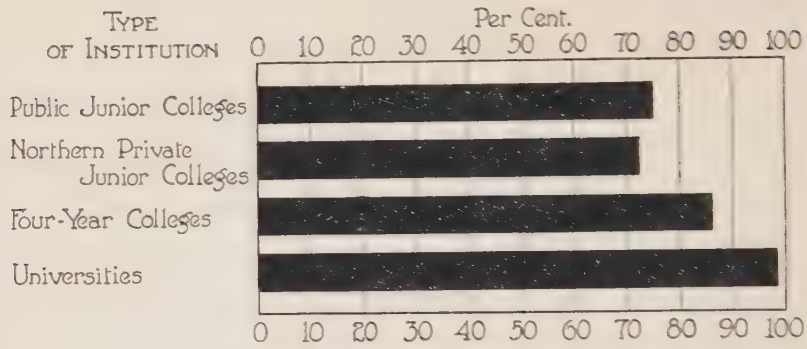
Type of Institution
Per Cent.
0 10 20 30 40 50 60 70 80 90 100
Public Junior Colleges
Northern Private Junior Colleges
Four-Year Colleges
Universities
0 10 20 30 40 50 60 70 80 90 100

Figure 37

Percentages of instructors in junior colleges, in four-year colleges, and in universities having undergraduate majors or more training in the fields in which they are teaching

TABLE LXXVI

Distribution of Instructors According to the Number of Different Departments in Which They Teach

Type of Institution	Number of Different Departments									
	1		2		3		4		5	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Public junior colleges (182) ...	114	62.6	55	30.2	9	4.0	3	1.0	1	0.5
Northern private junior colleges (76)	46	60.5	21	27.6	7	9.2	2	2.6	..	..
Southern private junior colleges—accredited (25)	11	44.0	11	44.0	2	8.0	1	4.0	..	..
Southern private junior colleges—unaccredited (29)	17	58.6	6	20.7	4	13.8	1	3.4	1	3.4
Four-year colleges (119)	89	74.8	27	22.7	2	1.7	1	0.8	..	..
Universities (117)	117	100.0	..	..	..	..	..	..	..	..

The preparation of junior college instructors for work in certain departments.—The facts so far presented touching the extent of preparation for subjects taught and the number of different departments in which teachers are required to give instruction lead naturally to the question of whether there are not variations among the subjects as to amounts of preparation.

i.e., whether in certain lines instructors are not characteristically better prepared than they are in certain others. Table LXXVII presents the results of an illustrative inquiry to ascertain the situation in this regard. It reports the numbers and percentages of teachers of certain subjects reporting (a) graduate or combinations of graduate and undergraduate majors, (b) undergraduate majors or more work, and (c) less than undergraduate majors in the subjects taught. This table is to be read as follows: 35, or 72.9 per cent, of the 48 teachers of English in public and northern private junior colleges from whom report was had indicate that they had either a graduate major or both graduate and undergraduate majors in that subject as preparation for their teaching work; 40, or 83.3 per cent, had undergraduate majors or more, and but 8, or 16.7 per cent, had less than an undergraduate major. The subjects selected for illustration are seven in number, three, viz., English, French, and chemistry, showing approximately three fourths or more who appear to have had adequate preparation. In three others, viz., economics, political science, and sociology, training seems to be deplorably lacking. The

TABLE LXXVII

NUMBERS AND PERCENTAGES OF JUNIOR COLLEGE INSTRUCTORS HAVING (a) GRADUATE MAJORS OR BOTH GRADUATE AND UNDERGRADUATE MAJORS, (b) UNDERGRADUATE MAJORS OR MORE, AND (c) LESS THAN UNDERGRADUATE MAJORS IN CERTAIN SUBJECTS TAUGHT

SUBJECT	GRADUATE OR DOUBLE MAJORS		UNDERGRADUATE MAJORS OR MORE		LESS THAN UNDERGRADUATE MAJORS	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
1. English (48)	35	72.9	40	83.3	8	16.7
2. French (28)	21	75.0	26	92.9	2	7.1
3. Chemistry (25)	21	84.0	22	88.0	3	12.0
4. History (27)	18	66.7	21	77.8	6	22.2
5. Economics (13)	2	15.4	4	30.8	9	69.2
6. Political science (10)	1	10.0	1	10.0	9	90.0
7. Sociology (8)	3	37.5	4	50.0	4	50.0
1, 2, 3 combined (101)	77	76.2	88	87.1	13	12.8
4, 5, 6, 7 combined (58)	24	41.4	30	51.7	28	48.3

remaining subject, history, seems to locate somewhere between these two extremes of adequacy and inadequacy. These facts present a serious situation. The difficulty discovered seems to be one arising out of the relatively small extent of total offering in some subjects as compared with others. No one will desire to contend that those subjects in which teachers show meager preparation should be omitted from the offering. The

curriculum to be restricted to English, foreign language, a few courses in science, and mathematics. Nor will there be advocates of having them taught by persons insufficiently prepared to do the work. The way out, if we are to have junior colleges, must lie in other directions.

IV. Training in Education

The amount of work in education taken by the several groups of instructors.—The last aspect of the training of instructors on which information has been assembled and is here presented is that which concerns the work in the field of education. The numerical and percentage distribution of each group of instructors as to the amounts taken is shown in Table LXXVIII. This table also includes at its foot the median number of hours taken and these are again presented in Figure 39. The amounts were set down by each instructor after he had checked those courses in a list printed on the blank of inquiry which he had pursued during his period of training.

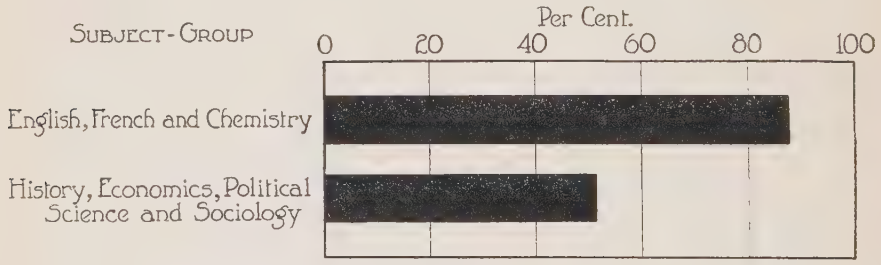

Figure 38

Percentages of teachers (a) of English, French, and chemistry and (b) of history, economics, political science, and sociology having undergraduate majors or more in subjects taught

The first horizontal row of figures, giving the number and percentage of each group of instructors without work in this field, is fully as informative as any other portion of the table. We see here that, although relatively small proportions of teachers in the larger groups of junior college instructors are without training in this field, the proportion mounts to almost a third for the college group and almost a half for the university group. The distributions likewise tend toward the larger amounts much more often for the instructors in the new unit. The differences noted are borne out by the medians, with 16.2 and 21.5 semester hours, respectively, for public and northern private junior colleges, and 5.0 and 1.8 hours, respectively, for the older types of higher institutions. The larger amount for the private group is to be explained by the fact that the majority are in Missouri where many of the institutions serve almost predominantly as teacher-training institutions. Several of the instructors responding are

specialists in education who have had large amounts of this work, and this tends to be reflected in the measure of central tendency. The large difference between the junior colleges on the one hand and the colleges and universities on the other is, without doubt, a reflection of the fact that the former have much more largely than the latter come from the ranks of high school teachers who must in most states and in most teacher-training institutions meet certain minimum requirements in the field.

While unquestionably this work in education must vary widely in value from class to class and school to school in which it is taken, the differing amounts as shown do indicate that instructors in junior colleges have had during their periods of training something not experienced by large proportions of college and university teachers, that is, regularly appointed opportunities for considering educational and teaching problems. It would be surprising, indeed, if, in the long run, this would not result in a tendency to superiority of teaching skill on the part of the former group.

V. The Teaching Load

Number of clock hours in the teaching load.—The general and special preparation of instructors is not the sole determinant of the feasibility of giving effective instruction in an educational institution. Consideration must be given also to conditions under which the work goes forward. One of these of major importance where instruction on collegiate level is concerned is the total amount of instructional activity required, in other words, the teaching load. Where unduly large, it would be impossible for a teacher to do good work.

The distribution of teaching loads in clock hours per week has been assembled for each of the main groups of instructors and from these the median and quartile amounts to be found in Table LXXIX and Figure 40 have been computed. For this purpose each group was first divided into two subgroups, those in the first of which were teaching courses on junior college level only, and those in the second of which were teaching on this and some other level. The latter group in junior colleges includes those teaching some work in the secondary unit below, while in other institutions it includes those teaching students on senior college or graduate level also.

Those who were manifestly part-time instructors, either as determined by their own statements or by the internal testimony of their reports, were omitted from the computations. This reduced the university group more than any other. Equating laboratory teaching complicated somewhat the task of ascertaining total teaching loads. Decision in this respect was based upon what appeared to be the standard practice of weighting the two types of work in each institution reporting. In some instances this meant counting three hours of laboratory as two of classroom teaching, in others three of the former as one of the latter.

TABLE LXXVIII

NUMERICAL AND PERCENTAGE DISTRIBUTIONS OF INSTRUCTORS BY THE AMOUNTS OF WORK IN EDUCATION TAKEN
(INCLUDING MEDIAN AMOUNT FOR EACH GROUP)

NUMBER OF SEMESTER HOURS IN EDUCATION	PUBLIC JUNIOR COLLEGES (151)		NORTHERN PRIVATE JUNIOR COLLEGES (86)		SOUTHERN PRIVATE JUNIOR COLLEGES—ACCREDITED (15)		NORMAL SCHOOL JUNIOR COLLEGES (25)		FOUR-YEAR COLLEGES (119)		UNIVERSITIES (121)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
0	17	11.3	14	16.3	4	26.7	3	12.0	37	31.1	55	45.5
1– 6	10	6.6	5	5.9	3	20.0	..	..	30	25.2	24	19.8
7–12	27	17.9	7	8.2	3	20.0	2	8.0	19	15.9	13	10.8
13–18	35	23.1	9	10.4	2	13.3	7	28.0	19	15.9	12	9.9
19–24	24	15.9	16	18.6	1	6.7	4	16.0	8	6.7	7	5.8
25–30	17	11.3	14	16.3	..	..	3	12.0	2	1.7	6	5.0
31–40	13	8.6	12	13.9	2	13.3	3	12.0	3	2.5	4	3.3
41–50	1	0.7	1	1.2	..	..	1	4.0	1	0.8	..	..
51–60	5	3.3	2	2.3	..	..	1	4.0	..	..	..	..
61–70	..	..	3	3.5	..	..	1	4.0	..	..	..	..
71–80	..	..	2	2.3	..	..	..	..	..	..	..	..
Over 80	2	1.3	1	1.2	..	..	..	..	..	..	..	..
MEDIAN	16.2	..	21.5	..	7.5	..	19.1	..	5.0	..	1.8	..

The table and figure show the median load of public junior college instructors teaching on junior college level only to be 13.5 clock hours per week, the range of the middle fifty per cent being 11.2 to 15.1 hours. A fact not shown in the table is that the total range in number of clock hours is from 9 to 25, with only eight of the 44 cases in excess of 15 hours, four of these being at 16 hours, two at 17, one at 20, and one at 25. The median load for teachers in northern private junior colleges is 1.4 hours greater than for public institutions, the differences at the first and third quartiles being, respectively, less and more than this amount. The load for instructors in four-year colleges does not differ markedly from that for public junior colleges, although the quartiles show a slight excess for the college group. In the group of college teachers here represented have been included those in all of whose classes freshmen and sophomores are to be found, while the group represented in the right-hand trio of columns includes those who are teaching in addition to classes enrolling freshmen and sophomores others in which only upperclassmen were registered. The teaching load of those in the universities represented is notably lower than for all other groups studied. The first quartile and median for this group are interestingly near each other, the proximity being explained by the large number of teaching burdens clustering in the vicinity of the measures shown.

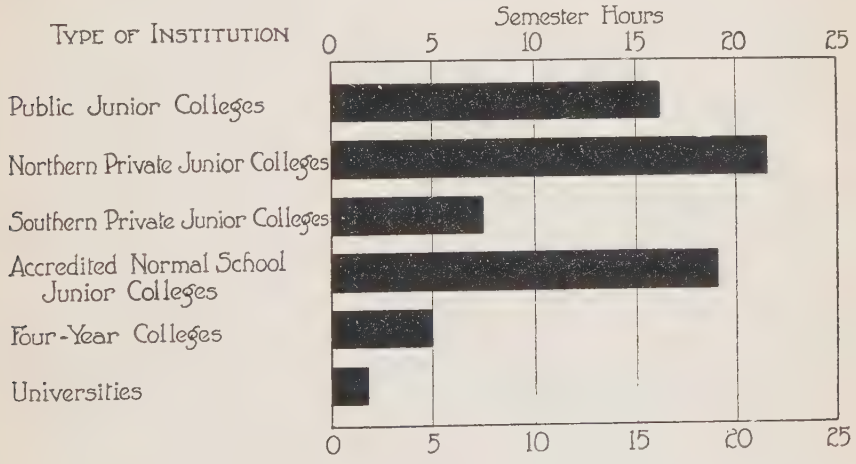

Figure 39

Median number of semester hours of work in education taken by each group of instructors

To arrive at the measures of tendency reported for public junior colleges in the three right-hand columns of Table LXXIX it was necessary first to obtain a basis of equating high school work in terms of college work. As no one knows what proportion of the work of a clock hour of

junior college instruction is represented by the work of a clock hour of high school instruction, the quartiles and median given were computed from teaching loads arrived at by weighting the high school work on the basis of current practice. Thus, it was found that the median load of full-time high school teachers in high schools associated with 15 public junior colleges was 21 clock hours (not necessarily periods) of teaching. (The range was 16 2/3 to 25 clock hours.) As the median for full-time junior college teachers is 13.5 hours, this means that the median practice is to regard a high school hour as 64.3 per cent of a junior college hour (13.5 divided by 21). With the high school portions of the teaching load equated in this way, we find that the median load of public junior college teachers who give instruction in both units is somewhat less than for full-time junior college teachers. There is, however, no ground for believing that the teaching work of such instructors is less than for the other group, since we do not know the actual relative weight of instructional units on the two levels. The fact, however, that the load for full-time teachers is not in excess of that for teachers in standard colleges affords some assurance that the typical practice of weighting followed for those teaching on both levels cannot be far from appropriate.

TABLE LXXIX

MEDIAN AND QUARTILE CLOCK HOURS IN THE TEACHING LOAD OF INSTRUCTORS IN JUNIOR COLLEGES, FOUR-YEAR COLLEGES, AND UNIVERSITIES

TYPE OF INSTITUTION	JUNIOR COLLEGE LEVEL ONLY			JUNIOR COLLEGE AND ABOVE OR BELOW		
	First Quartile	Median	Third Quartile	First Quartile	Median	Third Quartile
Public junior college (44-130)[a] ..	11.2	13.5	15.1	10.6	12.3	14.3
Northern private junior college (24)	11.5	14.9	17.9	...[b]	...	...
Four-year colleges (47-68).....	11.8	13.4	15.6	12.0	14.8	16.8
Universities (42-31).....	9.0	9.3	12.8	8.5	10.1	11.7

[a] The first of the two numbers in parentheses gives the number of instructors represented in the first three columns of figures; the second, those in the second three columns.

[b] No facts were gathered on high school teaching load for private junior colleges.

The teaching load of those instructing on the junior college level and above in four-year colleges is seen to be somewhat higher than for those teaching courses on the junior college level only. The difference can hardly be accidental, but it is difficult to explain unless there is a tendency to make adjustments of loads owing to the larger classes in the lower college years. The differences for the university group are not large enough to require special comment.

The main findings of the study of teaching loads are that instructors in public junior colleges carry approximately as much work as do those in four-year colleges, that instructors in northern private junior colleges are burdened somewhat more heavily, and that all these groups teach more than do instructors in universities.

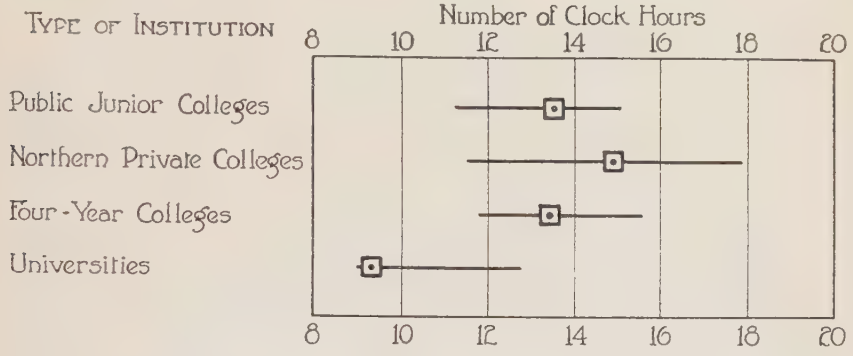

Figure 40

Median and quartile clock hours in the teaching load of instructors in junior colleges, four-year colleges, and universities (the length of line represents the range of the middle fifty per cent; the square locates the median)

VI. Experience

Another factor that will be generally conceded to be of some importance in evaluating possibilities of effective instruction on the junior college level is the extent of experience of the instructor. As junior college, college, and university teachers represented in the current chapter were asked also to provide information concerning all positions held and the periods of tenure of them, it has been possible to compare the several groups in this respect also. The distributions made were for the numbers of years (1) in the present position, (2) in all educational positions, and (3) in high school, junior college, college, and university positions. For these distributions, not reproduced here, were computed the medians to be found in Table LXXX and in Figure 41. In interpreting the figures presented it is desirable to keep in mind that reports made by instructors did not include the year during which report was requested, that is 1921-22, but for experience only up to the opening of that school year.

A glance down the first column of figures emphasizes the conclusion that there is a large proportionate turnover in all types of institutions represented. Of the junior college groups the shorter tenures of present positions is in private institutions where a half of all instructors represented had been in their present positions less than a year. The tenure in public

junior colleges, while all too short, tends to be twice as long as in the private group. This median tenure is about two thirds the length of that in the four-year colleges, but identical with that in the universities.

TABLE LXXX

MEDIAN NUMBER OF YEARS OF EXPERIENCE IN PRESENT POSITION, IN ALL POSITIONS, AND IN PRESENT AND RELATED POSITIONS OF INSTRUCTORS IN JUNIOR COLLEGES, FOUR-YEAR COLLEGES, AND UNIVERSITIES (NOT INCLUDING THE YEAR DURING WHICH REPORT WAS MADE)

TYPE OF INSTITUTION	IN PRESENT POSITION	TOTAL EXPERIENCE	IN HIGH SCHOOL, JUNIOR COLLEGE, COLLEGE, AND UNIVERSITY TEACHING
Public junior colleges (188)	1.6	10.3	9.1
Northern private junior colleges (90)	0.9	5.2	5.0
Southern private junior colleges, accredited (25)	0.8	5.7	5.0
Four-year colleges (117)	2.4	9.6	8.9
Universities (120)	1.6	4.8	4.2
All junior colleges (303)	1.4	8.4	7.8
Four-year colleges and universities (237)	2.0	7.3	7.0

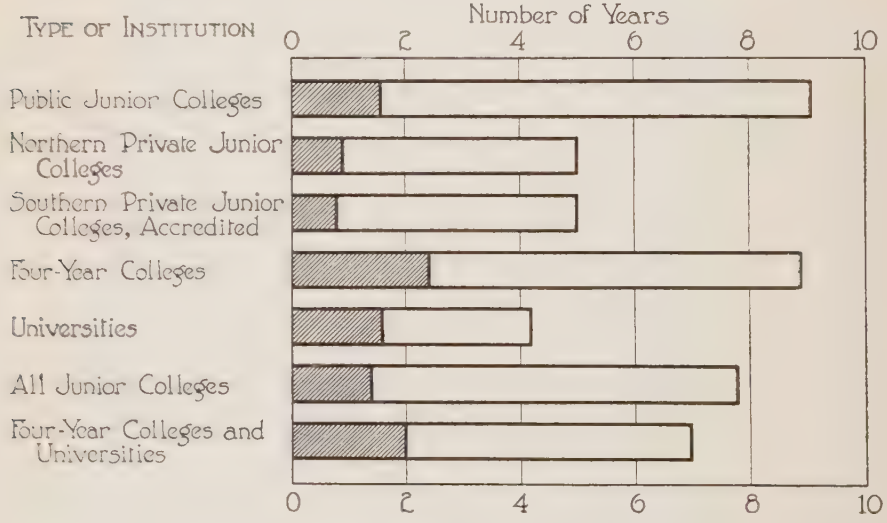

Figure 41

Median numbers of years of experience in present position and in related positions of instructors in junior colleges, in four-year colleges, and in universities (shaded, in present position; shaded and in outline combined, in present and related positions)

The tendency to brevity of tenure in junior colleges is doubtless somewhat accentuated by the brief history of the movement and the very recent establishment of many of the units. The especially short period of service in present positions of instructors in private junior colleges is also in part due to the fact that, being for the most part institutions for women students only they are staffed by women teachers who have shorter total periods of service than do men. This is shown in the following data concerning instructors in northern private junior colleges: of the 90 represented, 24 were men whose median period of total experience in all educational positions was 9.5 years, and 66 women, whose median period of total experience was 4.5 years. The respective medians in present positions were 1.7 and .7 years. The relatively short periods in four-year colleges and universities is to be explained in part by the considerable proportions of those represented who teach in junior college years only and who secure promotion by transfer to other institutions. The lower figure for the university group results from the part-time instructors who are carrying graduate work and who plan ultimately to secure positions at higher ranks elsewhere in which they remain for longer periods.

The relative positions of the several types of institutions as just seen are considerably interchanged by the measures of experience presented in the second and third columns of figures in which the rank orders in an arrangement from greatest to least amounts of experience are all but identical. Of the two columns the last is perhaps the more significant, since it considers only experience in high schools, junior colleges, colleges, and universities, and not also experience in rural, elementary, and other types of institutions which must have less meaning for teaching on the junior college level. In this column the teachers in public junior colleges take the superior position, and this is because a larger proportion of them have had extended experience in high school teaching before entering upon junior college work. They are closely followed by instructors in four-year colleges. Of the five medians of separate groups of instructors represented, the lowest is that for the teachers in universities, although it does not drop far below that for private junior colleges. Moreover, it appears that a full half of this group have had more than 4.2 years of related experience, which is far from the same thing as saying that the majority of those who give instruction to underclassmen in universities are "inexperienced."

If experience in present and in related positions counts for anything in effectiveness of classroom procedure, we are justified in anticipating that teachers in public junior colleges will at least not fall below those in other higher institutions.

VII. Remuneration

The last item conditioning the effectiveness of instruction in the several types of institution represented to be canvassed in these comparisons is that of annual salaries received. The significant relationship here is, of course, that if junior college salaries do not compare favorably with those paid in colleges and universities, the new unit will not be able to secure instructors as well equipped in matters of training and satisfactory experience as are employed in the older types of institution.

From the distributions of annual salaries have been computed the measures of tendency shown in Table LXXXI and Figure 42. Before attention is directed to the figures given a few words of explanation of procedure followed are in order. Many of the private junior colleges contract with their teachers to pay certain annual salaries plus living including board and rooming accommodations. In all these cases the institutions' estimates of the value of the room and board provided were accepted without question and added to the annual cash salary. The total thus obtained was used in the computations of medians and quartiles made. As a number of instructors, especially in the university group, were on part-time, it was necessary to recompute the stipends reported for such teachers so as to have all uniformly on a full-time basis. Another comment on procedure refers to the addition of two groups of instructors to those already represented in foregoing portions of the chapter, high school teachers in districts in which public junior colleges are maintained, and high school teachers in districts not maintaining junior colleges. The purpose of incorporation of these groups will become apparent in the interpretative comments to follow. The data concerning salaries of the former group were gathered at the same time as were those for instructors teaching in junior colleges. They include no instructors giving instruction in junior colleges, as these are all represented in the first group named in Table LXXXI. The data concerning salaries of teachers in high schools in districts not maintaining junior colleges were provided on special requests to superintendents of schools in a number of randomly selected mid-western cities of the same size as most of those in which the public junior colleges were located. They came in from cities ranging in population from 10,000 to 70,000. These two new groups of materials concern a total of 728 additional teachers. The data presented are those for teachers of "regular" subjects only.

TABLE LXXXI

MEDIAN AND QUARTILE ANNUAL SALARIES OF INSTRUCTORS IN JUNIOR COLLEGES, FOUR-YEAR COLLEGES, UNIVERSITIES, HIGH SCHOOLS IN DISTRICTS MAINTAINING JUNIOR COLLEGES, AND HIGH SCHOOLS IN DISTRICTS NOT MAINTAINING JUNIOR COLLEGES (FIGURES TO THE NEAREST DOLLAR)

TYPE OF INSTITUTION	MEN			WOMEN			TOTAL		
	First Quartile	Median	Third Quartile	First Quartile	Median	Third Quartile	First Quartile	Median	Third Quartile
Public junior colleges (106-96)[a]	2189	2478	2706	2008	2200	2450	2102	2298	2576
Northern private junior colleges (13-44)	1856	2150	2775	1528	1784	2125	1566	1843	2195
Southern private junior colleges accredited (22-15)	2250	2550	3050	1519	1612	1681	1631	2175	2594
Four-year colleges (68-51)	2400	2593	2867	1625	1881	2092	1868	2413	2738
Universities (106-14)	1707	2150	3010	1575	1650	1750	1673	2067	2833
High schools in districts with junior colleges (60-180)	2025	2233	2489	1756	1961	2181	1813	2023	2300
High schools in districts without junior colleges (103-385)	1569	1868	2079	1493	1627	1810	1511	1653	1890

[a] The first figure between the parentheses refers to the number of men represented, the second to the number of women.

The figures in Table LXXXI make clear that, except for men in southern private junior colleges, the tendency is for public junior colleges to pay better salaries than do the private. It may, moreover, be questioned whether the number of men concerned in the southern group is large enough to be representative. As concerns women, the northern tend to pay more than do the southern private institutions. Men in public junior colleges receive somewhat, but not strikingly, less than do those in four-year colleges, while women receive notably more. Except for the lowest fourth, salaries of instructors of both sexes in public junior colleges are appreciably but not markedly less than those in four-year colleges (see last trio of columns of figures). Again, salaries in public junior colleges compare favorably with those of instructors teaching courses to underclassmen in universities, except as concerns the third quartile of men and of men and women combined. The exceptions arise out of the fact that men of high rank in universities have teaching responsibilities for courses taken by freshmen and sophomores. There are instances of salaries in this group ranging up to $5000 and $6000. Fewer salaries in the other groups reach such figures.

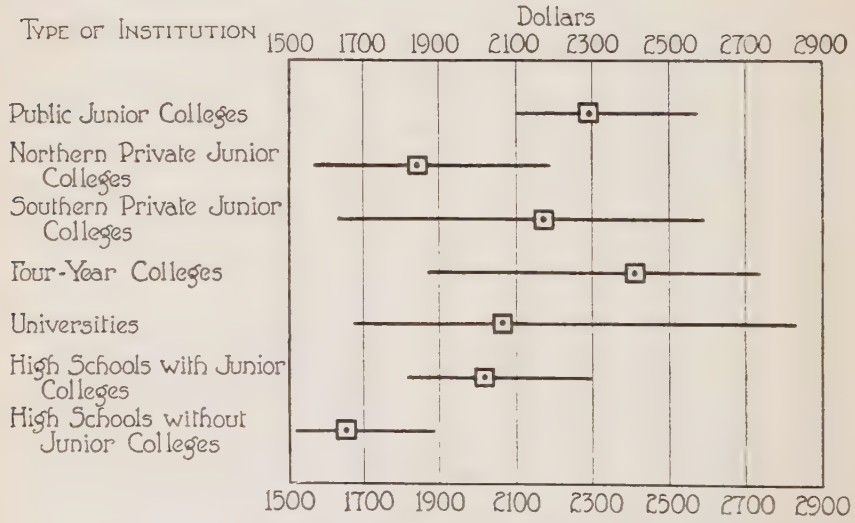
Type of Institution
Dollars
1500 1700 1900 2100 2300 2500 2700 2900
Public Junior Colleges
Northern Private Junior Colleges
Southern Private Junior Colleges
Four-Year Colleges
Universities
High Schools with Junior Colleges
High Schools without Junior Colleges
1500 1700 1900 2100 2300 2500 2700 2900

Figure 42

Median and quartile annual salaries of instructors in junior colleges, four-year colleges, universities, high schools in districts maintaining junior colleges, and high schools in districts not maintaining junior colleges (the length of line represents the range of the middle fifty per cent; the square locates the median)

A comparison of the figures for instructors in public junior colleges with those in the two high school groups is likewise illuminating. The figures show that there is some tendency to difference between high school and junior college instructors in the same districts—a median difference for all instructors of something like $250. High schools in districts not maintaining junior colleges pay salaries considerably lower than do those with junior colleges, which leads to at least one conclusion of significance, that junior college work is as a rule not introduced until a district has already taken care in a relatively satisfactory way of work on the lower level. It is worth noting that salaries in northern private junior colleges range between those in high schools in districts maintaining, and in high schools in districts not maintaining, junior colleges.

The general conclusion of this study of remuneration as it concerns public junior colleges is that salaries in them do not compare unfavorably with those in other higher institutions. It should not be impossible to secure at the figures cited some teachers who will do very well the work of junior college instruction. On the other hand, it is desirable still to raise the general level to some extent, first, becahse for some years to come it will still be regarded as more honorific to be a member of a staff of a four-year college, or university, and secondly, because the junior college cannot afford, as does the university, the opportunity for further graduate study while one is receiving a salary as full-time instructor.

VIII. Major Conclusions and Implications

Summary.—The trend of the facts presented is such as to afford assurance of the ultimate efficacy of instructional work in the junior college. In the matter of degrees held and duration of periods of training, to be sure, the colleges and universities lead the junior colleges at a considerable distance, but from the standpoint of the brief history of the movement the progress of the new unit is to be regarded as commendable. With respect to the special preparation of instructors for subjects taught, also, the junior colleges make a fair showing, but lag somewhat behind their predecessors in the collegiate field, the inadequacy lying for the most part in subjects of which the student takes lesser amounts during his first two years of college work. Commendation for progress, however, should hardly be interpreted as signifying satisfaction with the *status quo,* and there should be continued insistence on an approach to, and attainment of, standards as these are seen to be operative in colleges and universities.

In training in the field of education, in experience, in teaching load, and in salaries, instructors in junior colleges compare somewhat more favorably than in the foregoing items with those in other higher institutions. In the first of these the junior college instructor notably, and in the second he appreciably, surpasses the instructor in the college and university. After all

apologies are made for the varying quality of both, there remains an expectation that observation of much classroom work in both types of unit would demonstrate a somewhat superior instructional procedure for the junior college. The teaching load is not essentially different in public junior colleges from what it is in four-year colleges, but is somewhat larger than in universities. While remuneration is not as large for junior college teachers, the present disparity is not discouraging. It will take no extraordinary elevation of salaries of the middle group as shown to assure something like successful competition with colleges and universities for instructors. It should not be assumed, however, that the current prestige of teaching in colleges and universities and the opportunities in universities for doing graduate work while teaching are not elements of competition to be overcome.

It must be admitted, as the reader has perhaps discerned, that the favorable light in which junior colleges are placed in the comparisons envelops the public more than the private institutions. With respect to all but a very few items the figures for the latter are less commendable than those for the former. It must in all fairness be emphatically stated, however, that this is far from the same thing as saying that all public junior colleges are superior in these respects to all private junior colleges. Some of the latter are clearly superior to certain of the former in most of the items concerning which facts have been presented. The conclusion to be drawn is that the trend of superiority is with the public unit.

Implications.—The chapter should not be brought to a termination without reference to certain implications of the facts presented. The first two of these concern the means of achieving further progress toward securing teachers with better preparation in some of the fields represented in an adequate junior college offering. Both may well be used in identical instances. One of these is to encourage the establishment only of sizable junior college units. Establishment of institutions with small enrolments either must obstruct the offering of many subjects essential to a desirable curriculum or force their presentation by teachers inadequately prepared in them. Larger numbers of students will tend to remove both horns of this dilemma.

The second is for accrediting agencies not merely to acquiesce in, but even to encourage, the assignment of instructors to work on both junior college and high school levels. Certainly, it is to be preferred to require teaching work in a single department up and down in the system including the last two high school and the freshman and sophomore college years, rather than to force a spread of the teaching load to departments for which an instructor has insufficient preparation. The argument of contamination of the instructor by contact with high school standards of work is little more than bogyism, and seems to ignore entirely the analogous

contamination which the credulous might be induced to believe is experienced when one who teaches senior college classes also gives instruction to college freshmen and sophomores. The writer's observation of work done by those who teach on both levels leads him to believe that it can be and is in many instances being done without violation of collegiate standards, and that it often effects an elevation of the standards in high school work—a value worth bearing in mind.

Above and beyond this advantage of fostering adequate preparation for a specialty by encouraging the teaching of a subject on both high school and junior college levels lies one suggested by the more extended training in educational subjects of teachers in junior colleges. Many of the junior college instructors—most of them in fact—are also teaching courses in the high school, and are therefore meeting the requirements of high school certification in accredited schools, which now almost universally, in regions where public junior colleges are prevalent, include training in the professional field referred to. Should there be an effort to apply a standard to junior colleges which would reduce the proportion of those giving instruction on both levels, there would almost certainly result a reduction in the proportion meeting this requirement of certification, and an increase of those who have had no regularly appointed opportunity for considering educational and teaching problems. In view of the degree of similarity—even of identity—of these problems in the last two years of the high school and the first two years of college, such a reduction could hardly fail to be looked upon as in the nature of a retrogression. There seems little occasion for a belief that the training of teachers in the last years of the high school and the first years of the college should be essentially different either in this respect or in the matter of the extent of special preparation for the subjects taught. In the latter respect the later high school years would profit by the more extended preparation essential for junior college teaching.

CHAPTER XIII

JUNIOR COLLEGE INSTRUCTION—II. ITS CHARACTER AS SHOWN BY OBSERVATION AND COMPARISON

I. The Method of Comparison Used

The right procedure to follow in any thoroughgoing comparison of instruction in junior colleges and on junior college level in standard colleges and universities would be the measurement of results by means of achievement tests in each of the subjects represented. It is needless to point out that such a procedure is impossible. The impossibility arises from the fact that such tests are not yet available for use, and from the impracticability of including within the scope of this investigation of the junior college movement the development of such tests for use in connection with the study. Lacking tests of this sort in any considerable proportion of the courses to be found in junior college years, recourse was taken to comparative judgments of instruction observable in junior colleges and in junior college years of standard colleges and universities.

For the purposes of this comparison the writer visited, during the academic year 1921-22, a large number of junior college, college, and university classes in session. The actual number visited exceeded two hundred, approximately two thirds being in junior colleges and the remainder in colleges and universities. Because a number of these visits were necessarily brief, sometimes extending through as short a period as ten to fifteen minutes, the judgments here dealt with concern, not the full number of class exercises with which contact was made, but the 152 full periods or almost full periods of work seen. Among these 152 class exercises were relatively few—at most, 20—which were not observed throughout, and in these exceptions the portion of period of presence equalled or exceeded three fourths of the full length.

A total of 111 class exercises observed were in junior colleges; 41 were in standard four-year colleges and universities. Thirty-nine junior colleges scattered from New England to California and from Minnesota to Louisiana are represented in the class exercises of the former group. Three colleges and three universities, two state and one on a private foundation, i.e., a total of six standard higher institutions, were visited during the observation of the latter group. These six institutions are fully approved by the standardizing agencies in their respective sections, with their degrees generally acceptable at face value in all sections of the United States. On the other hand, several of the junior colleges were not accredited institutions at the time of visitation, a fact which makes the comparison

to follow in some part unfair to the latter group of institutions. In addition to the requirement that the colleges and universities must be of unquestioned standard, only one other basis of selection was operative: in order to economize time in travel it was desirable that they be not too remote from the junior colleges visited. Even with this restriction, these six higher institutions are to be found in five different states, almost as widely representative geographically as are the junior colleges.

It may be said with practically complete assurance that, in so far as numbers permit, both groups of instructors should represent fairly well the teaching situation in each of the types of institution included in the study. No effort was made in visits to junior colleges and to other higher institutions to observe a selected group of teachers. In almost all instances the procedure followed was to examine those portions of the class schedule during which the investigator had time for visitation and, after finding what work was going forward, to request direction to a particular classroom. Those who have made similar studies will be fully aware that the aim to make contact with junior college work in representative subjects or subject groups and the small number of such classes in process during any single class period affords little opportunity for *selection,* even if this is attempted.

In the colleges and universities, of course, only work in courses pointed out as being on junior college level was visited. Owing to the fact that in four-year institutions it is not uncommon to find underclassmen in junior college courses, the comparison of level of student performance must at times be unfair to the junior college movement. It is obviously impossible for upperclassmen to be attending classes in the junior colleges. Some attempt was made to safeguard the validity of the comparison by inquiring of the instructor in a college or university, after the conclusion of a class period, to what extent upperclassmen were enrolled in the class or section and had participated in the class exercise. The unfairness of the comparison is to some extent mitigated by the fact that third year students were occasionally enrolled in work observed in teachers colleges and normal schools including the junior college organization.

Before proceeding to describe the method of recording judgments for the comparison, it should be made clear that all observations were made by the same person and that judgments were not passed upon class exercises in subjects and subject groups with which the investigator had not had some previous contacts, either as student, teacher, or supervisor. The visits included contacts with a wide range of work in both main types of institution, extending through English composition and literature, elementary foreign language, earlier college courses in mathematics, science, history, and the other social studies, with an occasional observation of work in some special field like home economics, music, etc.

The judgments of teachers and teaching were arrived at by the use of a modification of a method and score card proposed by Rugg and described in the *Elementary School Journal*.[1] Although it is not desirable to present a full description of this procedure here, a brief characterization of its chief features and of the changes made for the purposes of this investigation is essential. The rating scale devised by Rugg requires passing judgment on teachers and teaching on a basis strictly *comparative* with reference to the following categories: (1) skill in teachng; (2) skill in the mechanics of managing a class; (3) teamwork qualities; (4) qualities of growth and keeping up to date; and (5) personal and social qualities. Attention is directed to desirable characteristics affecting each category by a series of questions, as, "Does he know the subject matter of his own and related fields?" "Is he skillful in conducting class discussions?," etc. The method of *comparison* enters at the point where a teacher is assigned a place in the scale in each of the categories in relation to a "best teacher," a "better than average teacher," an "average teacher," a "poorer than average" teacher, and a "poorest teacher," previously selected from among a number of teachers observed. The plan also includes a numerical rating on each category, as well as a "total numerical rating" covering all categories.

The modifications of the plan as used in this investigation were for the most part as follows:

(a) The characteristics making up "skill in teaching" were somewhat changed to meet the requirements of instruction on collegiate level. No marked changes were necessary, but minor modifications were desirable in view of the greater maturity of the student. As modified for use in this study, the detailed criteria are here reproduced:

SKILL IN TEACHING

To what extent—

Does he know the subject-matter of his own and related fields:

1. Does he make effective use of materials outside the textbook?
2. Does he relate lessons to materials in other fields and use illustrations outside his own subject?

Does he select subject-matter effectively for class reading and discussion?

Does he give evidence of having:

1. Formulated clearly his aims of teaching?
2. Planned his lessons specifically to carry these out?
3. Given students clear ideas of what is to be achieved?

[1] H. O. Rugg, Self-Improvement of Teachers through Self-Rating; A New Scale for Rating Teachers' Efficiency. *Elementary School Journal* 20:670-84. May, 1920.

Is he skillful in conducting class discussion?

1. Resourcefulness in organizing discussion.
   a. Is he fertile and quick in taking advantage of students' questions?
   b. Are his questions systematically planned, yet spontaneously given?
   c. Does he express himself clearly?
2. Skill in conducting drill exercises where drill is desirable.
3. Ability to develop new phases of the work.
   a. Are lessons well related to previous ones?
   b. Is material organized?
4. Ability to secure effective class participation and performance.
5. Skill in making the assignment.
   a. Was it an attempt to teach how to prepare the assignment?
   b. Was it more than a mere formal announcement of the number of pages, etc.?
   c. Are its scope and purpose clearly recognized by students?

Has he insight into the learning process in the material being presented?

1. Does he keep the discussion within the students' comprehension?
2. Does he appear to make the student aware of the peculiar difficulties of the materials being studied?
3. Does he adapt discussion to individual differences in students?

(b) The third category, "teamwork qualities," was omitted, as contacts with instructors were too brief to warrant judgment on this point.

(c) Two characteristics entering into judgment under the first category, "skill in teaching," were set out also as separate categories for special consideration on account of their special significance in an evaluation of the junior college movement. They have been designated as "scholarship of the instructor" and "level of class performance." The categories on which judgments were passed in this study are, therefore the following: (1) skill in teaching; (2) scholarship of instructor; (3) level of class performance; (4) skill in the mechanics of managing a class; (5) qualities of growth and keeping up to date; (6) personal and social qualities.

(d) The scales of teachers were made after only twenty teachers had been visited. This was necessary because the early visitation was scattered through several weeks and it was feared that the memories of class work observed would become too feeble to be useful in making the scales by the time a larger number of teachers could be visited. The scales were subjected to slight revision subsequently as poorer or better teachers came within the field of observation, but most of the teachers placed on the six scales used (one for each category named) retained their places throughout the period of visitation. Scales in their final form included a representation of teachers in public and private junior colleges, and in colleges and universities, the purpose being to secure a usable scale irrespective of the place of service of the teachers. The small number of teachers used in making the original scales as well as the short period during which each teacher was observed doubtless go far toward explaining the skewed distributions shown below.

II. The Instruction Compared

Comparison of skill in teaching in junior colleges and in colleges and universities.—The comparisons of instruction in junior colleges with that in colleges and universities are made by means of a series of tables and figures to be presented at this point. Table LXXXII and Figure 43 set forth the comparison for the first category, skill in teaching. The table is read as follows: 25, or 44.6 per cent, of all teachers visited in public junior colleges were ranked as "better than average" teachers; 27, or 48.2 per cent, as "average"; 4, or 7.1 per cent, as "poorer than average." In this group of 56 teachers, not one teacher was judged to be a "best" or a "poorest" teacher. The average of the ranks assigned to these teachers, arrived at by adding all the ranks and dividing by the number of instructors, is twenty-six. The distribution of the twenty instructors in junior college work observed in normal schools or teachers colleges tends to be slightly higher than for instructors in the first group of institutions. This shade of superiority is shown also in the averages in the last column. Owing to the method of judging used, and the small difference between these two distributions and the averages, it is probably safe to conclude that skill in teaching in these two types of institution is roughly equal. For private junior colleges the distribution, while having much in common with the groups preceding, tends to be somewhat lower. The average is 3.1, approximately a half step below the averages for public and normal school junior colleges.

In fairness to the private junior colleges, it must be stated that among the 35 instructors here reported upon there were 7 members of faculties in *unrecognized* junior colleges in southern states. The ranks on skill in teaching for 2 of these 7 instructors was average; of 1, poorer than average; and of 4, poorest. Computation of the average of the ranks of the 28 teachers remaining after these 7 have been removed brings the figure to 2.8. This is not markedly lower than for the preceding groups and essentially the same as for all junior college instructors as shown in the row immediately below. The average last referred to, however, becomes 2.6 after removing the teachers in unrecognized junior colleges.

A total of thirty-nine junior colleges, viz., nineteen public, five maintained in connection with normal schools and teachers colleges, and fifteen private, are presented in the data discussed.

The ranks assigned to skill in teaching for college and university instructors tend to be somewhat lower than for teachers in the junior colleges, but no large proportion of the teachers were ranked below "average." The averages of the ranks shown in the last column bear out what is anticipated from a scrutiny of the distributions. On account of the small number of cases involved it would be unwise to rush to the conclusion of the inferiority

of teaching in colleges from the lower average found for this group as compared with university instruction visited.

A conservative interpretation of the data presented would be that *classroom procedure* in junior colleges is assuredly on at least as high a plane as is instruction of freshmen and sophomores in colleges and universities. The investigator is of the conviction that such a conclusion is unfair to junior colleges, as he came away from his large amount of classroom visitation in higher institutions with a distinct impression of the superiority of the junior colleges with respect to the item in question. There are, of course, as is to be seen from the data presented, very good and very poor teachers in both groups, but there is no doubt in the writer's mind that junior college teachers as a group are superior in technique.

TABLE LXXXII

RANKS ASSIGNED TO SKILL IN TEACHING

TYPE OF INSTITUTION	RANK ASSIGNED												
	1		2		3		4		5		Totals		Average
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	..	..	25	44.6	27	48.2	4	7.1	..	..	56	99.9	2.6
Normal junior college	1	5.0	11	55.0	6	30.0	2	10.0	..	..	20	100.0	2.5
Private junior college	1	2.9	11	31.4	11	31.4	7	20.0	5	14.2	35	99.9	3.1
All junior colleges	2	1.8	47	42.3	44	39.6	13	11.7	5	4.5	111	99.9	2.7
College	..	..	3	17.6	9	52.9	4	23.5	1	5.9	17	99.9	3.2
University	..	..	10	41.7	10	41.7	2	8.3	2	8.3	24	100.0	2.8
All college and university	..	..	13	31.7	19	46.3	6	14.6	3	7.3	41	99.9	3.0

Scholarship of instructors.—The distributions and averages in Table LXXXIII and Figure 44 show that the judgments of scholarship place the groups of junior college instructors in the same order as found in Table LXXXII, i.e., the normal school group seem slightly superior to the public junior college group, and the latter in turn are superior to the private junior college group. The latter conclusion is not open, as was the analogous one in the case of skill in teaching, to the marked lowering of the average of the judgments of scholarship by removing the judgments on the seven instructors in unrecognized junior colleges.

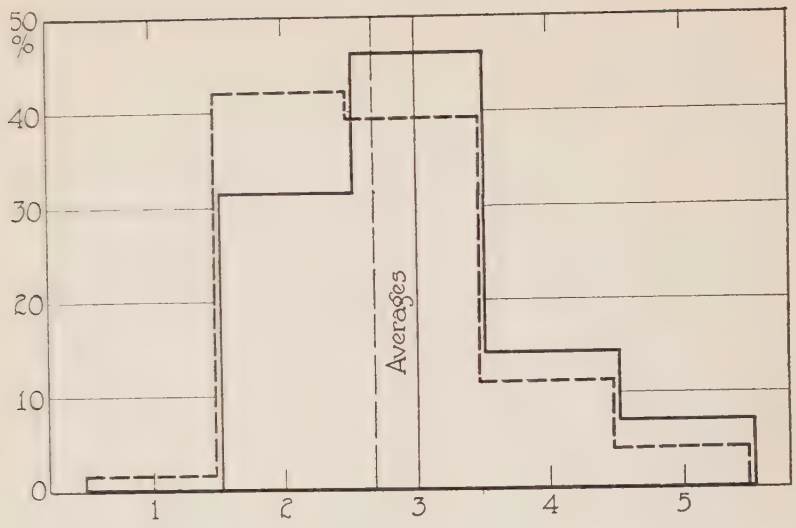

Figure 43

Distributions of ranks assigned to skill in teaching of junior college and college and university instructors (solid line, college and university; broken line, junior college)

TABLE LXXXIII

RANKS ASSIGNED TO SCHOLARSHIP OF INSTRUCTORS

TYPE OF INSTITUTION	RANK ASSIGNED												
	1		2		3		4		5		Totals		Average
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	8	14.2	34	60.7	10	17.9	4	7.1	..	..	56	99.9	2.2
Normal junior college	5	25.0	13	65.0	2	10.0	..	..	..	..	20	100.0	1.9
Private junior college	2	5.7	14	40.0	13	37.1	4	11.4	2	5.7	35	99.9	2.7
All junior colleges	15	13.5	61	55.0	25	22.5	8	7.2	2	1.8	111	100.0	2.3
College	2	11.8	9	52.9	5	29.4	1	5.9	..	..	17	100.0	2.3
University	12	50.0	10	41.7	2	8.3	..	..	..	..	24	100.0	1.6
All college and university	14	34.1	19	46.3	7	17.1	1	2.4	..	..	41	99.9	1.9

An examination, however, of the data on the scholarship of college and university instructors, will make clear that the relationship of superiority of the junior college group in skill in teaching is here reversed. The college and university group is notably better both as to distributions and averages of ranks assigned. This superiority may be illustrated by the fact that the

college and university group includes almost as many ranked as "best" as does the junior college group, although the latter includes almost three times the total number of cases, i.e., 111 as compared with 41 of the former.

A question of no minor importance which must be given consideration in evaluating the junior college movement, especially in view of the superiority in scholarship of college and university instructors, is whether the instructional staffs of junior colleges are static with reference to this important characteristic. As the junior colleges visited vary in their dates of establishment, it has been possible to make a comparison of the ranks assigned to instructors observed in the newer and in the older units, with a view to securing a partial answer to this question. Table LXXXIV presents the comparison in this respect of "newer" public junior colleges, i.e., those established during the last five years, and the "older" ones, i.e., those in existence during a longer period. Data for public junior colleges are here used because more new junior colleges were visited in this group than in the other types. Although the number of cases involved is not large, there is sufficient difference to justify the conclusion that as junior colleges pass the initial stages, their instructors advance toward the upper ranks in scholarship. Although they seem to start at what may be deemed an unsatisfactory level, they attain in time just as high an average of ranks as obtains for college and university instructors of work on the junior college level.

TABLE LXXXIV

RANKS ASSIGNED TO SCHOLARSHIP OF INSTRUCTORS, COMPARING NEWER AND OLDER PUBLIC JUNIOR COLLEGES

GROUPS OF PUBLIC JUNIOR COLLEGES	RANK ASSIGNED												
	1		2		3		4		5		Totals		Average
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Newer	..	...	10	50.0	7	35.0	3	15.0	..	..	20	100.0	2.7
Older	8	22.2	24	66.7	3	8.3	1	2.8	..	..	36	100.0	1.9
All	8	14.2	34	60.7	10	17.9	4	7.1	..	..	56	99.9	2.2

Level of class performance.—The comparison here involved touches the effectiveness of student performance as shown during the class periods visited. As in the instances of the other categories, the aim was to assign the ranks on a comparative basis, junior college and college and university class exercises being compared with the same scale of "best" to "poorest" instructors, the scale being made up of representatives of three types of institutions. The table (LXXXV) shows that there is little difference in trend of distributions in average rank among the junior colleges, or among

the other higher institutions, although there is a small difference between these two groups (see also Figure 45 in this connection). While not large, this difference is at least notable and encourages the belief that level of student performance in junior colleges is no lower than in classes in the same subjects in standard higher institutions.

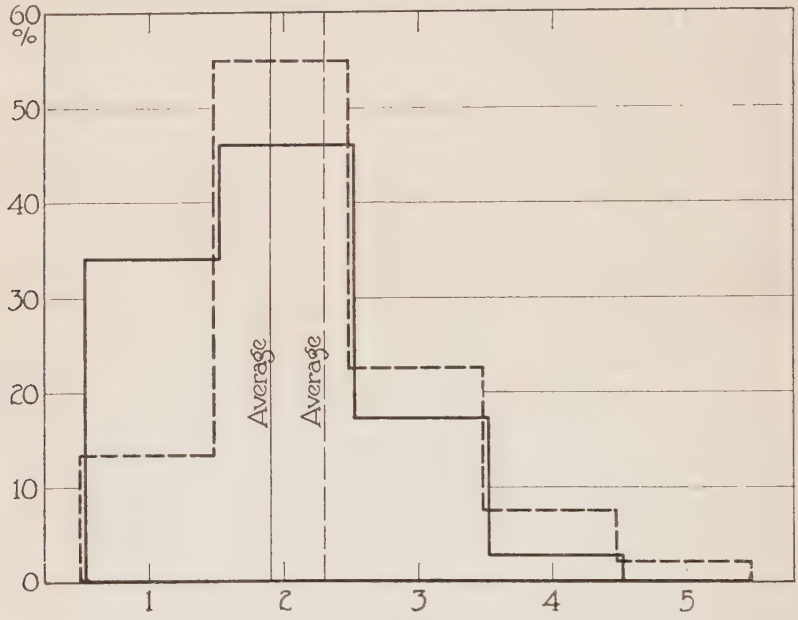

Figure 44

Distributions of ranks assigned to scholarship of junior college and college and university instructors (solid line, college and university; broken line, junior college)

In order to economize space there is omitted here a table comparing teachers in newer and older junior colleges with respect to the level of class performance obtained. This table shows a somewhat higher distribution and average of ranks for the older than for the newer groups of junior colleges. The averages of the ranks are, respectively, 2.7 and 2.9. Thus, the level of class performance seems to tend to rise to some extent with the length of period of establishment of the junior college unit.

The lag of skill in teaching behind scholarship of instructors.—Up to this point in the comparison of instruction the outstanding differences between the two large groups of teachers concerned are (1) the marked superiority in scholarship of the college and university group, (2) the notable superiority of the junior college group in skill in teaching, and (3) the appreciable superiority of the latter group in level of class performance secured. There seems, thus, to be a disparity between the scholarship of the instructor on

the one hand and the other two characteristics on the other. It will, therefore, be appropriate, before continuing the canvass of the remaining categories, to make a special study of the extent to which the ranks assigned to individual teachers for skill in teaching and level of class performance secured lag behind those assigned for scholarship. This is essayed in

TABLE LXXXV

RANKS ASSIGNED TO LEVEL OF CLASS PERFORMANCE

TYPE OF INSTITUTION	RANK ASSIGNED												AVERAGE
	1		2		3		4		5		TOTALS		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	3	5.4	20	35.7	21	37.5	12	21.4	..	..	56	100.0	2.8
Normal junior college	2	10.5	6	31.6	5	26.3	6	31.6	..	..	19	100.0	2.8
Private junior college	2	5.7	12	34.3	11	31.4	6	17.1	4	11.4	35	99.9	2.9
All junior colleges	7	6.4	38	34.6	37	33.6	24	21.8	4	3.6	110	100.0	2.8
College	..	..	6	35.3	4	23.5	5	29.4	2	11.8	17	100.0	3.2
University	..	..	4	16.7	15	62.5	4	16.7	1	4.2	24	100.1	3.1
All college and university	..	..	10	24.4	19	46.3	9	22.0	3	7.3	41	100.0	3.1

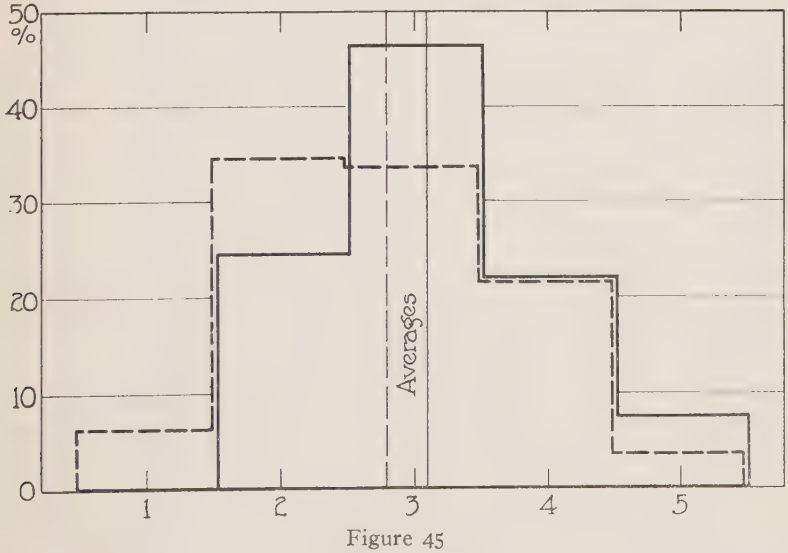

Figure 45

Distributions of ranks assigned to level of class performance in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

Tables LXXXVI and LXXXVII and Figures 46 and 47. The method of computing the number of steps of "lag" may be described by stating that, for compiling Table LXXXVI, the rank assigned to scholarship was subtracted from the rank assigned to skill in teaching. This table is to be read

TABLE LXXXVI

LAG OF SKILL IN TEACHING BEHIND SCHOLARSHIP OF INSTRUCTOR

TYPE OF INSTITUTION	NUMBER OF STEPS OF LAG												Average
	−1		0		1		2		3		Totals		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Lag
Public junior college	3	5.4	27	48.2	23	41.1	3	5.4	..	..	56	100.1	.46
Normal junior college	..	..	11	55.0	6	30.0	3	15.0	..	..	20	100.0	.60
Private junior college	2	5.7	21	60.0	9	25.7	3	8.6	..	..	35	100.0	.37
All junior colleges	5	4.5	59	53.2	38	34.2	9	8.1	..	..	111	100.0	.46
College	..	..	5	29.4	8	47.1	4	23.5	..	..	17	100.0	.94
University	..	..	3	12.5	14	58.3	5	20.8	2	8.3	24	100.0	1.25
All college and university	..	..	8	19.5	22	53.6	9	22.0	2	4.9	41	100.0	1.12

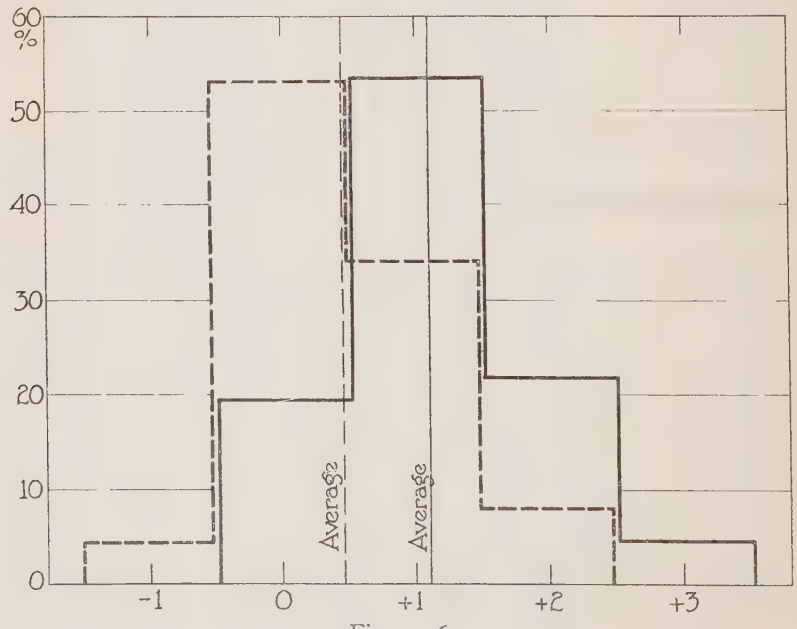

Figure 46

Distributions of lags of skill in teaching behind scholarship of instructors in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

as follows: of the group of fifty-six public junior college teachers, there were three whose ranks in skill in teaching were one step higher than their ranks in scholarship, twenty-seven who had identical ranks in both, twenty-three whose scholarship exceeded their skill by a single step, etc.

There is a surprisingly large amount of lag for almost all groups concerned. As is to be anticipated from what has already been presented, the table and chart show a much larger extent of lag for college and university than for junior college instructors. The average of the lags for the former is approximately a full step on the scale, while that for the latter is approximately a half step.

The lag of level of class performance behind scholarship of instructors.—The extent of lag of level of class performance behind scholarship is even greater. This is true for all groups of instructors except those in private junior colleges, in which case the lag is slightly less. The average of the lags is approximately a half step for all junior college instructors and one and one-third steps for the college and university group.

Comparison in the remaining categories.—Examination of Tables LXXXVIII, LXXXIX, and XC, and Figures 48, 49, and 50 show no very remarkable differences among the several groups of instructors represented. In ranks of *skill in the mechanics of managing classes,* assigned after considering smoothness of procedure, attention of the class, order or discipline, arrangement for effective use of material and equipment, and regard for conditions of light, heat, and ventilation, the only appreciable differences are slightly in favor of the junior college group, except that the public group itself has a lower and the normal school group a higher average of ranks than all others.

While there is variation among the groups, there is approximate equality of distribution and averages of ranks in the matter of *qualities of growth and keeping up to date.* As this category involves such considerations as the reading of professional literature, participation in, and contribution to, educational meetings, pursuing advanced study, invention and experimentation with new methods of teaching, co-operation in investigational work, contribution to educational literature in the special field concerned, etc., the decisions on ranks assigned here have probably a weaker foundation than have those in any other criterion applied. Such judgments cannot be well made without a more extended knowledge of a teacher's attitudes than is ascertainable by the sometimes all-too-brief conversations with him or the observation of his work during a single class period. The writer is nevertheless convinced that the groups are not far from equally distributed in these respects.

TABLE LXXXVII

LAG OF LEVEL OF CLASS PERFORMANCE BEHIND SCHOLARSHIP OF INSTRUCTOR

TYPE OF INSTITUTION	NUMBER OF STEPS OF LAG												AVERAGE
	−1		0		1		2		3		Totals		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Lag
Public junior college	4	7.1	21	37.5	24	42.9	7	12.5	..	..	56	100.0	.61
Normal junior college	1	5.3	6	31.6	5	26.3	6	31.6	1	5.3	19	100.1	1.00
Private junior college	5	14.3	19	54.3	9	25.7	2	5.7	..	..	35	100.0	.23
All junior colleges	10	9.1	46	41.8	38	34.6	15	13.6	1	0.9	110	100.0	.56
College	1	5.9	4	23.5	6	35.3	5	29.4	1	5.9	17	100.0	1.06
University	..	..	3	12.5	8	33.3	9	37.5	4	16.7	24	100.0	1.58
All college and university	1	2.4	7	17.1	14	34.2	14	34.2	5	12.2	41	100.1	1.37

Figure 47

Distributions of lags of level of class performance behind scholarship of instructors in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

TABLE LXXXVIII

RANKS ASSIGNED TO SKILL IN THE MECHANICS OF MANAGING CLASSES

TYPE OF INSTITUTION	RANK ASSIGNED												Average
	1		2		3		4		5		Totals		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	3	5.4	25	44.6	23	41.1	5	9.0	..	..	56	100.0	3.0
Normal junior college	2	10.0	11	55.0	5	25.0	2	10.0	..	..	20	100.0	2.4
Private junior college	2	5.7	15	42.9	8	22.9	7	20.0	3	8.6	35	100.1	2.8
All junior colleges	7	6.3	51	45.9	36	32.4	14	12.6	3	2.7	111	99.9	2.6
College	1	5.9	8	47.1	3	17.6	4	23.5	1	5.9	17	100.0	2.8
University	..	..	11	45.8	10	41.7	2	8.3	1	4.2	24	100.0	2.7
All college and university ...	1	2.4	19	46.4	13	31.7	6	14.6	2	4.9	41	100.0	2.7

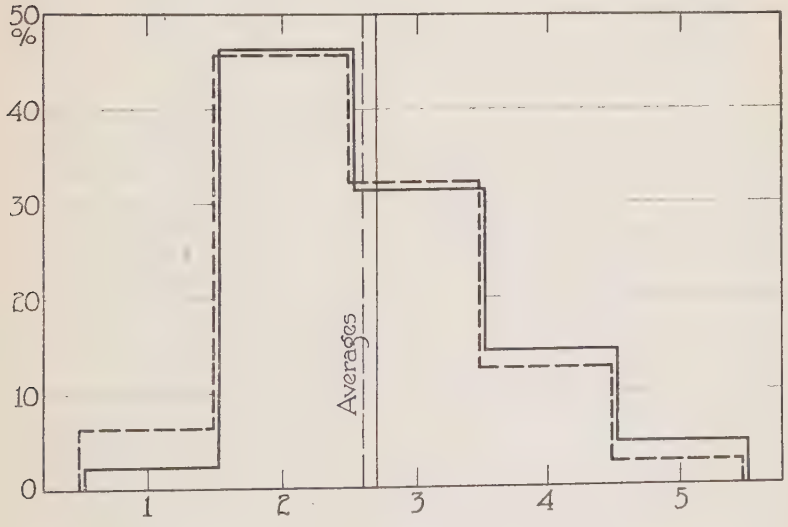

Figure 48

Distributions of ranks assigned to skill in the mechanics of managing classes in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

TABLE LXXXIX

RANKS ASSIGNED TO QUALITIES OF GROWTH

TYPE OF INSTITUTION	RANK ASSIGNED												
	1		2		3		4		5		Totals		Average
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	2	3.6	25	44.6	25	44.6	4	7.1	..	..	56	99.9	2.6
Normal junior college	2	10.0	13	65.0	4	20.0	1	5.0	..	..	20	100.0	2.2
Private junior college	3	8.6	9	25.7	11	31.4	8	22.9	4	11.4	35	100.0	3.0
All junior colleges	7	6.3	47	42.3	40	36.0	13	11.7	4	3.6	111	99.9	2.6
College	..	..	5	29.4	10	58.8	1	5.9	1	5.9	17	100.0	2.9
University	1	4.2	12	50.0	8	33.3	3	12.5	..	..	24	100.0	2.5
All college and university ...	1	2.4	17	41.5	18	43.9	4	9.8	1	2.4	41	100.0	2.7

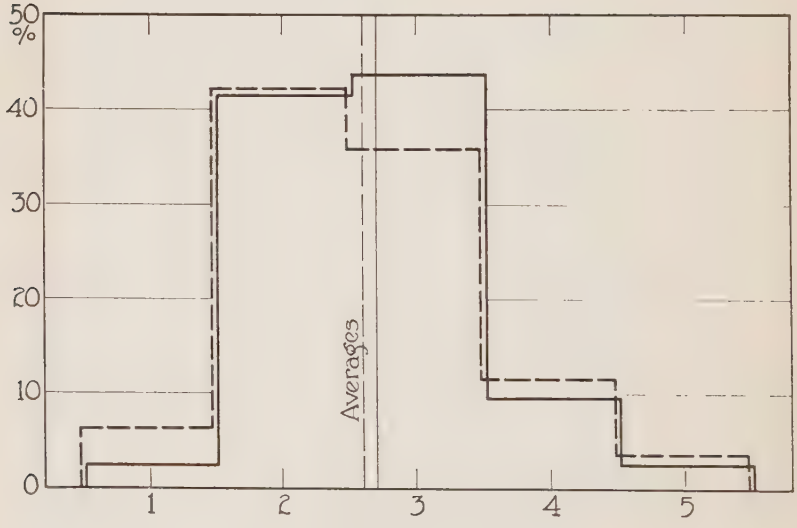

Figure 49

Distributions of ranks assigned to qualities of growth of instructors in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

TABLE XC

Ranks Assigned to Personal and Social Qualities

Type of Institution	Rank Assigned												Average
	1		2		3		4		5		Totals		
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	Rank
Public junior college	4	7.1	28	50.0	21	37.5	3	5.4	..	..	56	100.0	2.4
Normal junior college	1	5.0	12	60.0	6	30.0	1	5.0	..	..	20	100.0	2.4
Private junior college	3	8.6	13	37.1	9	25.7	8	22.9	2	5.7	35	100.0	2.8
All junior colleges	8	7.2	53	47.7	36	32.4	12	10.8	2	1.8	111	99.9	2.5
College	..	..	7	41.2	7	41.2	3	17.6	..	..	17	100.0	2.8
University	..	..	14	58.3	5	20.8	4	16.7	1	4.2	24	100.0	2.7
All college and university	..	..	21	51.2	12	29.3	7	17.1	1	2.4	41	100.0	2.7

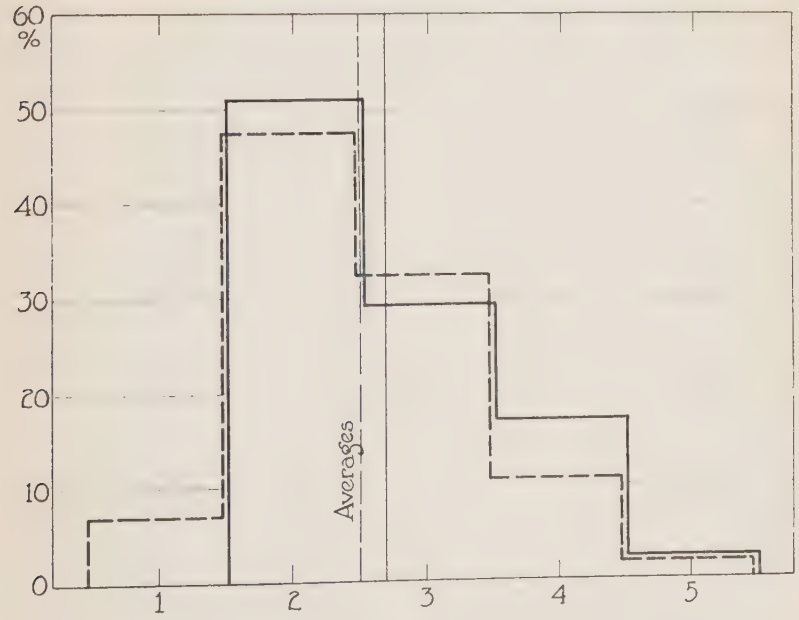

Figure 50

Distributions of ranks assigned to personal and social qualities of instructors in junior colleges and in colleges and universities (solid line, college and university; broken line, junior college)

Perhaps, as a group, the college and university instructors, more especially the latter, show a preference for growth in scholarship in their special subjects to growth in technique. Just at present, however, they probably do not exceed the junior college teachers in this desire for growth in scholarship, especially as the latter, through the efforts to secure recognition for the junior college work, have been motivated to secure additional scholastic equipment by means of attendance at summer sessions and otherwise.

The comparison of instructors as to their *personal and social qualities* is shown in the final table and figure. In assigning these ranks it was these qualities as they concern relationships to, and influences upon, the student which were kept in mind. Consequently, the judgments grew for the most part out of what was seen of these qualities in the classroom while the work of instruction was in process, or at the opening and close of the class period visited. It was almost always possible to secure additional opportunities for observing the nature of the personal and social qualities, as through conversations with the teachers concerned or with associates and superiors.

In justice to the private junior college group it should be stated that the lower distribution and average is to some extent owing to the inclusion of seven teachers in unaccredited institutions. With these omitted, there are no marked differences in this respect between the two major groups considered or among the minor groups constituting them.

III. The Concurrence of the Findings of This and the Preceding Chapters

The major conclusions of this comparative observation of classroom instruction in junior colleges and that on the same level in other higher institutions correspond closely with those drawn from the study of personnel presented in the chapter immediately preceding. In skill in teaching the group of junior college instructors tends to be somewhat superior. This finding is in harmony with the fact that most of them have had experience in an institution in which, because of the relative immaturity of students, methods of teaching tend to be matters of greater concern than in higher institutions generally—a difference reflected in the much larger extent of work in the special field of education reported by them. In the matter of scholarship in the subjects taught, on the other hand, the teachers in colleges and universities are superior to those in the junior colleges, a conclusion corresponding with the facts in the matter of differences in amount of preparation, both total and special. There is concurrence of the findings of the two chapters again in the line of most desirable progress, which is more extended preparation (than they now have) of junior college teachers for the subjects in which they give instruction, which in turn involves more extended periods of graduate training.

The implications also are the same as those drawn from the materials on personnel in Chapter XII. They are in the direction of (1) favoring large rather than small junior college units, so as to require large teaching staffs which in turn will encourage a higher degree of specialization in preparation and instruction and (2) encouraging instructional activity on both upper high school and junior college levels both for the sake of the advantages like that accruing under (1) and the greater assurance such a distribution of work of instruction will provide that those who do the teaching on the higher level will have given some special consideration during their periods of training to problems of education and technique of teaching. As is generally known, no requirement in education now applies to college teachers and, in the event that separation of high school and junior college faculties is insisted upon, a lower average amount of training in the field of education for junior college teachers would almost certainly result, to be reflected in time in a lower level of skill in teaching.

The tendency towards superiority of skill in teaching of the group of junior college instructors as compared with those in other higher institutions should be accepted as assurance that the line of division between secondary and higher education would be more satisfactorily placed if the secondary rather than the higher institutions included the early college years. There can be little question that close association of the lower with the upper years leads to a confusion of criteria for judging teachers and teaching in freshman and sophomore years. The domination of teaching groups in universities and colleges by standards of research and other scholarly productivity—standards fully appropriate to upper and graduate years—must exercise a detrimental effect upon teaching procedure in these lower years. The general establishment of junior colleges as parts of the secondary school system should go far toward clarifying these confusing issues by achieving dissociation at a point where it is highly desirable. There seems no occasion, on the other hand, to fear that the improvement in scholarship of junior college teachers found in this and the foregoing chapters still to be desirable cannot be achieved without developing the instructors unduly on the research side, while giving them ample appreciation of its importance and acquaintance with its methods.

A concluding word may be addressed to those who are still disposed to wonder after reading this and the preceding chapters, how junior college teachers and teaching can be as nearly satisfactory when compared with college teachers and teaching in colleges and universities as they are, especially in view of the youth of the movement. After all, it is seldom indeed that junior college work is established in communities in which work in the lower schools of a relatively satisfactory sort has not already been provided. One item of evidence to this effect is the better level of salaries of high

school teachers in communities with junior colleges than that in communities in which junior college work is not given, as shown in the last table and figure of Chapter XII. As a general thing such salaries can attract to these high schools teachers somewhat superior to those to be found where salaries are lower. Junior college teachers are usually chosen from the most professionally capable and ambitious of these selected high school teachers. Such a tendency toward sifting out the high school teachers could hardly fail to result in a condition as nearly satisfactory as that found, although it might leave something to be desired in the way of further additions to the average extent of graduate training.

CHAPTER XIV

JUNIOR COLLEGE INSTRUCTION—III. THE SUCCESS OF JUNIOR COLLEGE GRADUATES

I. The Third Method of Comparison

Another possible method of passing judgment on the merit of instruction in junior colleges is that of comparing the scholastic success of graduates of these institutions who subsequently attend universities and colleges with that of students who have spent their first two years in these standard higher institutions and during that period have earned junior standing. It may be judged that the making of such a comparison is hedged about by a great variety of difficulties, but the importance of obtaining some such measure of junior college efficiency seemed to warrant the persistence necessary.

The names of junior college graduates represented in this study and the universities and colleges to which they went after completion of work in the lower unit were assembled by the writer during visits to junior colleges. He was careful to secure the names of *all* such graduates who went on from some one class finishing the junior college course in each institution. The classes were usually any one of the three completing their second year of junior college work in 1919, 1920, and 1921, the year decided upon in most instances being the one in which there was a relatively large class and, consequently, a relatively large number going on. As more recent classes were largest, the greatest single number represented in this study completed junior college work in 1921, spending the year 1921-22 in some standard higher institution. Data of the sort referred to were collected only from accredited junior colleges, that is, accredited usually by the state university or occasionally by some other recognized standardizing agency. Altogether, well over two hundred such names were assembled and it was thought at the time the study was initiated that this would supply an ample number for comparison.

The next step was to obtain the marks earned by these junior college graduates during their first year of residence in the institutions to which transfer was made. This was done by requesting the recording officers of more than a score of higher institutions represented to have indicated on cards supplied by the investigator the names and numbers of courses taken, and credits and marks earned by each student, as well as the total amount of credit toward advanced standing allowed for the junior college course which he had pursued. The officer appealed to was asked to supply also a description of the marking system in operation at the time the student was in residence.

Upwards of 180 cards were returned filled out or accompanied by some word of explanation. However, many did not contain usable information, so that the number of students whose records were finally incorporated in the study dropped to a point slightly below a hundred. The reasons for this decimation, which exceeded expectations in no small measure, are several. It appeared that many junior college graduates had asked for transfers of record without using them. In these instances the registrars of the university or college would respond that the student had "not entered here." A second reason was the granting by the university or college of less than sixty semester hours of credit toward advanced standing. In compiling the data it was not felt quite fair to the junior college to compare the records of such students with less than the equivalent of junior standing with other students in higher institutions who had the right to such standing. While it appeared that including those granted a less number of credits would affect the distribution of grades little or not at all, the aim was to keep both groups as nearly alike as possible in matters of standing in the university or college. In a few instances the marking schemes were unequatable. Another reason is the unwillingness of a few registrars to supply the information because students' grades are regarded as confidential in the institutions concerned. For the most part these officers manifested a commendable co-operative attitude and an interest in the study undertaken. Without this attitude decimation would have been even greater and the number of students concerning whom usable information is available would have dropped below the region of significance.

As it would have been too large a task to be feasible to secure information concerning the scholastic efficiency during the junior year of comparable groups of students who had attended standard universities and colleges since high school graduation, comparison is here restricted to the junior college graduates referred to and a group of students who had attended the University of Minnesota through three school years. The particular group considered were among those concerned in the chapter (VI) dealing with mental democratization. For present purposes it was necessary to exclude from consideration all who had not earned the right, as determined by the number of honor points and credits in their favor on the registrars' books, to unconditional admission to the Senior College, i.e., full junior standing. It may be desirable to repeat here that this standing is achieved by students who earn at least ninety credit hours (the equivalent of sixty semester hours) and ninety honor points in the Junior College of the College of Science, Literature, and the Arts. One honor point is given for each hour of credit with the mark of C; two, for each hour of credit with the mark of B; and three, for each hour of credit with the mark of A. Marks below C do not bring honor points. It is not to be understood that

all the students in the University of Minnesota group had been admitted to Senior College standing. A small proportion may not have met the requirements as to courses and groups of subjects. All had, however, the requisite total of credits and honor points. The number of such students in the total group studied in Chapter VI turned out to be seventy-five. Nine others had earned enough credits, but had not accumulated a sufficient number of honor points for senior standing.

The method of ascertaining the averages of the marks earned by these University of Minnesota students has been explained in the chapter already referred to. The method of computing comparable average marks from the records of the junior college graduates in universities and colleges requires further explanation, especially on account of the great variety of marking systems to be found in any large number of higher institutions. With all this variety, almost all group into either five-point or six-point schemes. In the latter instances, the same numerical values were assigned to respective steps from the maximum mark to the minimum as was done for the University of Minnesota students for Chapter VI. The series of numerical values was 95, 85, 75, 65, 55, and 45, the lowest being assigned to the failure mark. For five-point schemes the top and failure marks were assigned the same values as in the six-point scheme, i.e., respectively 95 and 45. The three remaining marks were given values at points that divided the difference between 95 and 45 into four equal parts. This gave the marks from the maximum to failure on the five-point schemes the following values: 95, 82½, 70, 57½, 45. With these values for each semester hour of credit (or its equivalent), the averages of the marks earned by junior college graduates were computed after the manner referred to as being used in the chapter on mental democratization.

One further detail of method requires mention, and concerns the nature of the courses represented in the computations. All work was included excepting required physical education, orchestra, band, and chorus.

II. The Results of the Comparison

The distributions and medians of the average marks compared.—The results of the effort at comparison of the two groups of students are presented in the accompanying table (XCI). The first pair of columns gives the distribution for those eighty-two junior college graduates who transferred to institutions of the university type; the second pair, that for all junior college graduates finally introduced into the comparison, including the thirteen who went to institutions of the college type. All these students received sixty or more (seldom more) semester hours of advanced standing in the college to which transfer was made; the third pair, that for the students in the University of Minnesota who, as measured by credits and

honor points earned during two years, were entitled to senior college standing; the fourth, that for this number increased by the nine who had earned ninety credits but who had not accumulated the ninety honor points required. At the foot of the table are the totals of numbers of students considered, the median mark, and the average deviation from the median for each of the four groups.

TABLE XCI

DISTRIBUTION OF AVERAGE MARKS (1) OF JUNIOR COLLEGE GRADUATES DURING THE FIRST YEAR OF SUBSEQUENT ATTENDANCE IN UNIVERSITIES AND COLLEGES AND (2) OF CERTAIN STUDENTS IN THE UNIVERSITY OF MINNESOTA DURING THEIR THIRD YEAR OF RESIDENCE

AVERAGE MARK	JUNIOR COLLEGE GRADUATES TRANSFERRING TO				UNIVERSITY OF MINNESOTA STUDENTS EARNING DURING FIRST TWO YEARS			
	Universities		Universities and Colleges		Ninety or More Credits and Honor Points		Ninety or More Credits without Regard to Honor Points	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
90.0-94.9	8	9.8	10	10.5	5	6.6	6	7.1
85.0-89.9	10	12.2	13	13.7	15	20.0	15	17.9
80.0-84.9	24	29.3	27	28.4	16	21.3	16	19.0
75.0-79.9	25	30.5	28	29.5	23	30.7	26	31.0
70.0-74.9	9	11.0	10	10.5	14	18.7	17	20.2
65.0-69.9	4	4.9	5	5.3	2	2.7	4	4.8
60.0-64.9	1	1.2	1	1.1	..	..	..	..
Below 59.9	1	1.2	1	1.1	..	..	..	..
TOTALS	82	100.1	95	100.1	75	100.0	84	100.0
MEDIAN MARK	80.3		80.6		79.8		79.1	
A. D. from median	5.5		5.6		5.4		5.5	

As has been pointed out, the groups most appropriately to be compared are the first and third. The comparison is facilitated by Figure 51, which shows the distribution of average marks as well as the median mark of each group. While the percentages at identical points are seldom the same, the distributions as a whole are not sufficiently different to discredit either group in comparison with the other. If one group has a lower percentage than the other at any point, the difference tends to be compensated for at neighboring points on the same side of the median. The medians themselves are not far apart, the difference, although slight, being in favor of the junior college graduates. Adding the junior college graduates who attended colleges rather than universities tends to raise the distribution and median to a slight extent (see second pair of columns), while adding the students earning

ninety credit hours but not ninety honor points lowers similar measures for the university group. The conclusion to be drawn from the materials presented is that there *seems to be no appreciable difference in the degrees of success in the work of their junior years of junior college graduates and of those who do their first two years of work in a standard university.*

The institutions represented.—As already stated, the data concerning junior college graduates have been gathered from wide areas. The institutions in which they did their first two years of college work are nineteen in number and include both public and private schools. More of the former are represented and by a larger number of students. With one exception all private junior colleges represented are in two mid-western states. Approximately two thirds of the students from public junior colleges are from units in California, the remainder being from the Mid-West. The total number of junior college graduates considered is divided almost equally between junior colleges of the Mid-West and of California.

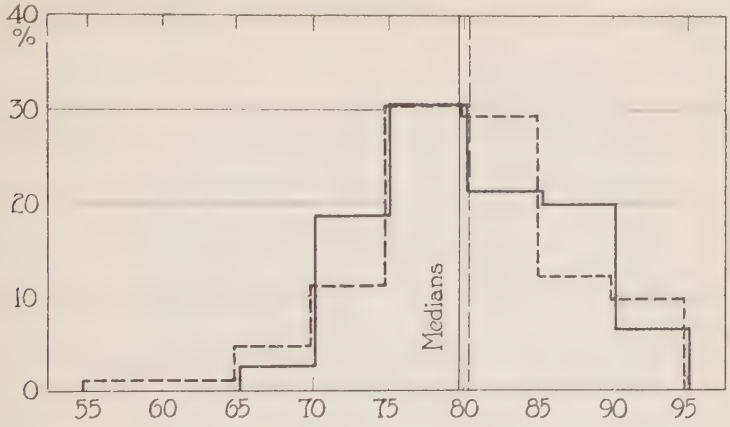

Figure 51

Comparison of the percentage distributions of marks given to (1) junior college graduates during the first year of subsequent attendance in universities and to (2) students in the University of Minnesota during their third year of residence (solid line, university students; broken line, junior college graduates)

Thirteen different universities and six colleges are represented in the data supplied by registrars which were used in comparing the scholastic efficiency of junior college graduates with that of students spending their first two years in the University of Minnesota. With one exception, the universities are all members of the Association of American Universities. This institution and the six colleges are all on the approved list of higher institutions prepared by this association. The higher institutions reporting on considerable numbers of students are the Universities of California,

Illinois, Minnesota, Missouri, Southern California, Wisconsin, Stanford, and Washington universities, and Pomona College, with a scattering of students to other institutions like the universities of Chicago, Iowa, Kansas, and Texas, and Columbia University. The comparison involves, thus, only universities and colleges in which satisfactory standards of work are presumed to be maintained.

III. Concluding Comments

In view of what has been presented in foregoing chapters there is little occasion for surprise at the approximate equality of efficiency of the two groups of students represented in the comparison. Certain portions of Chapter VI show the mental distributions of junior college and of state university freshmen to be similar, arguing that the extent of selection for admission to college work is much the same in both.

The curricular offerings during these years could not differ widely for the two groups of students, and, therefore, as far as the curriculum as a selective factor is concerned, it would operate with approximate equality on both. We have seen that, although the college and university teachers have better preparation in subject-matter, this advantage is in part offset by a higher level of teaching skill in the junior college. There is no reason to anticipate much difference in the subsequent records of junior college graduates owing to these distinctions. All things considered, there would be occasion for surprise if conditions with such a large extent of similarity should result in notable differences in the scholastic records during the third collegiate year.

Some question may be raised concerning the complete validity of the statistical procedure followed on the ground that differences in distributions of marks among educational institutions really signify differences in the meaning of any particular mark, e.g., that a mark of A in an institution in which typically only 10 per cent of the students receive it is of higher value than such a mark given in an institution in which 20 per cent receive it. Although there is some justification for the criticism, it is not sufficiently significant to discredit the conclusions drawn, especially as few of the institutions represented in the group of records of junior college graduates have adopted policies touching the distribution of marks. Distributions do not differ markedly where large numbers of students, instructors, and subjects are concerned and no policy of percentage distribution of marks has been formulated and followed.

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